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ACTINOMYKOSIS: A NEW INFECTIOUS DISEASE OF ANIMALS AND MANKIND.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(*Continued from p.* 16.)

These are the chief symptoms when the tongue is the seat of the disease. The pimple-like excrescences are often only the size of a pin's head or a millet-seed, but they are more frequently larger—from the size of a cherry to that of a walnut, or even greater. The inflammation (if any is present) and interstitial induration appear to proceed from the surface towards the centre, and the growth of the nodules takes place rapidly; and this is evidently proven from the circumstance attending their reappearance when they have been removed by operation. Mr. James has noticed this speedy reproduction, as in a letter to me he writes: "I am of opinion that most of the nodules or tubercles found in the substance of the tongue come to the surface at some time or other. For when treating such a tongue (as the one he first sent), we find sometimes that we have succeeded in curing the ulcers on the surface, but the next day or two we see a regular crop of ulcers and nodules on the surface again, and the poor animal protruding its tongue several inches from the mouth."

The appearance of the tongue, then, is characteristic of the affection, whether inspected while the animal is alive, or examined after death.

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In the great majority of cases, there are perceived a more or less considerable number of prominences, on the dorsum most frequently, on one or both sides of the tongue, or over the whole of its surface ; these look like nodules or tubercles, sometimes like warty excrescences flattened on the top, and vary in size from a millet-seed, a hemp-seed, or a pea, to that of a walnut ; they may be single or in clusters. The tongue is enlarged, indurated, "lumpy," often more or less extensively ulcerated in one or more places ; there is very considerable hypertrophy of the submucous and interstitial connective tissue ; atrophy or degeneration, more or less marked, of the muscular tissue ; and the peculiar yellowish-white round nodules disseminated singly, or in masses throughout, each containing a cluster, or at least a tuft of the *Actinomyces*. The gums, cheeks, palate or jaws may also be involved.

In addition to the description given of that first sent by Mr. James, as well as the second specimen, I will select that offered by Professor Putz,* veterinary teacher at the University of Halle, though many others might be given.

In February, 1882, Veterinary-Surgeon Enke sent to the clinic of the school, the tongue of a newly-slaughtered cow, which, for a long time—at least six months—had eaten very little. An examination of this tongue was carefully made, and it presented the following appearances :—Its posterior part was greatly swollen, and the dorsum extremely elevated ; its anterior portion appeared to be normal. About three inches behind the tip were a number of irregular, sharply-defined, warty-looking elevations, which were scattered over the entire upper surface of the organ backwards. They were in size from that of a linseed to a hen's egg, the largest having broken through the mucous membrane, while the smaller ones could be felt as little irregular masses beneath it. The former resembled large, oval, and very much flattened warts, deprived of their epithelium Their colour was pale-yellow, and their consistence soft and elastic. The largest of these was on the right side of the tongue, and was flat ; it measured 4½ centimetres long, 3 centimetres

* Die Seuchen und Herdekrankheiten Unserer Hausthiere, Abtheilung 2, seite 599.

broad, and 2½ centimetres high. Besides this growth, there were on the same side, towards the under part of the tongue, a great many nodules the size of a linseed, which could be felt beneath the mucous membrane. Large and small tumours of a similar character were found on the left side of the tongue. Above, on the arch of the dorsum, three large, well-defined cicatrices could be felt in the mucous membrane; these had a red appearance, and on their upper surface small irregularities could be felt rising, as it were, from the connective tissue beneath. The central cicatrix was in the middle of the tongue, between the circumvallate papillæ; the others were on each side, towards the margin of the tongue, the left being the largest—12·90 centimetres long, and 5·90 centimetres broad. In making a longitudinal section through the tongue, the tissues offered great resistance to the knife, and the cut surface exhibited an immense number of greyish and yellowish-white opaque nodules, imbedded in patches in the pale-red muscular tissue, many of them projecting beyond the level; their size was between that of a linseed and a florin. The largest of these patches was somewhat oval in form, and penetrated, in a stellate fashion, deeply into the tongue-substance, as if following the course of the muscular fibres. The upper surface of the section was moderately moist, and studded with a number of millet-sized yellow nodules. The apex of the tongue was the only part of the organ free from these bodies. The weight of the fresh tongue was 2,430 grammes (5 lbs. 7 oz.). All the other parts of the cow, according to Enke, were healthy. Microscopical examination of the new formations or nodules proved them to be composed of masses or tufts of the *Actinomyces*, between the tufts being an abundance of lime salts. The tissue of the tumours had a kind of sarcomatous appearance, but there could be no doubt whatever as to the nature of the disease.

*Actinomykosis of the Bones of the Jaws.**

I have already given Bollinger's description of the disease, as

* Gamgee (Dairy Stock) undoubtedly alludes to this affection, though he was unaware of its pathology. He writes: "In young cattle there is a somewhat frequent disease termed by some veterinary surgeons 'Osteo-sarcoma,' 'Spina-Ventosa,' and other inappropriate names. The only term I can give

it affects the bones of the jaws. Not unfrequently we have the tongue and jaw, or jaws, affected simultaneously or consecutively—generally the latter. The tumour which forms on or in the bone is apparently of a sarcomatous or fibro-sarcomatous character, according as the Actinomykosis is periosteal or myeloid. It often commences in the alveoli of the jaw, and thence extends into the mouth and the cancellated tissue of the bone, and is accompanied by abscesses and fistulæ. In this situation it has been observed in the ox, pig, goat, and dog.

Only one instance has been recorded in the dog—that by Professor Vachetta, of the Veterinary School at Pisa, and which was published this year under the heading of "Macrocellular Osteo-condro-sarcoma, with Actinomycosis." About two months before the Professor saw the dog, a swelling appeared, without any assignable cause, on the posterior half of the right branch of the lower jaw, and rapidly increased in volume. In about twenty days the tense skin became ulcerated, mastication was difficult, and the animal was then brought to the clinic of the school. The ulceration of the skin was now somewhat extensive, and in the centre of this was a small hole, into which

it is fibro-plastic degeneration of bone. There is no recognised cause of the disease. It occurs most readily from two to five or six years of age, and affects steers in preference to bulls; the lower jaw is most frequently seized in the vicinity of the second or third molar teeth. Sometimes the upper jaw is implicated....At a spot on the side of the face corresponding to the roots of the third or fourth grinder, above or below, a small, hot, circumscribed swelling occurs. The animal experiences no inconvenience from it, except when the part is struck or pressed upon. The tumour, however, grows and pain increases. In some cases the growth is rapid, and in a few months the disease has invaded the larger part of one-half of the upper or lower jaw, and gives rise to severe symptoms, which arise chiefly from disturbed mastication, pain, and often from various cruel methods of treating the disease. The teeth become loose in their sockets, may be affected by caries, and drop out. Anacker says, that sometimes a fistula opens into the mouth. . . . It is evidently a morbid condition of the bony structure. On dissecting the skin off the tumour, we find it covered with tough, fibrous tissue arranged in layers. The fibrous element diminishes towards the deeper parts of the growth, where at various parts *yellow accumulations of a friable, cellular, or granular matter are enclosed in solid cavities*, surrounded by bony plates, or a tough gristly tissue. M. Collignon, veterinary inspector of the slaughter-house of Montmartre (Paris), has observed the disease three times in 300 oxen, and those he found affected came from the marshy plains of La Rochelle. In the plains of Ferrara, and in the Maremme of Tuscany, the disease is very frequent. Low-bred animals are most subject to it, and its origin is usually attributed to a blow."

a probe could only be introduced two or three millimetres. The tumour was hard as a stone at the margin of the dental alveoli, but became softer towards the lower border of the jaw. With the exception of the ulceration, the skin was otherwise healthy in the neighbourhood. The tumour was not hot, neither did pressure upon it cause pain, but difficulty was evidently experienced in moving the jaw. The mouth was kept half open, and a little saliva flowed from it; the tongue was healthy, and nothing amiss was noticed on the left side or roof of the cavity. The fourth and fifth molars of the right side were pushed upwards by the growth of the tumour, and were a little separated from the adjoining teeth. The mucous membrane of the mouth was healthy, and the gums were not separated from the teeth. There was no swelling in the intermaxillary space, nor towards the neck. The jaw could be moved passively. The disease was diagnosed as Osteo-sarcoma, probably complicated with myeloplaxy.

In view of the rapid growth of the tumour, and the local and general condition of the animal, as well as the improbability of palliative, surgical, or pharmaceutical measures being of any avail, resection of the diseased portion of the jaw was made, and though for some time the prospects of recovery were favourable, yet the dog ultimately succumbed rapidly.

The major portion of the tumour was hard and fibrous, and had a reddish-yellow tint at the inferior part, whitish elsewhere. At the lower curvature the neoplasm became suddenly and regularly lobulated, the connective tissue forming the interlobular spaces being continuous with that composing the envelope of the tumour as a whole. The inferior third of the section showed multitudes of yellow points, irregularly disseminated throughout; there were none in the upper part. The tumour and its fibrous envelope were very slightly vascular. When examined microscopically, the most important feature noted was the presence of numerous disseminated *Actinomycetes* masses, especially towards the inferior part; they were only casually met with in the upper portion, while deeper in the tumour they were very definite in outline, and enclosed in a kind of nucleus composed of apparently dead tissue. Many of these radiate fungi did not show the slightest trace of calcification, others were completely invaded by lime

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salts, and the nodules enclosing them had to be treated with hydrochloric or nitric acid before their contour could be well defined. The fungus appeared in two rather different forms, or rather aspects, which probably depended upon its stage of growth. Cut in the direction of the sarcomatous tissue, intermediate to the necrobiotic focus, there were observed very numerous small discs composed of fine radiating filaments, one portion of which terminated in a rather dark punctiform dilatation (Fig 2). These

FIG. 2.—Young *Actinomyces* Disc.

were more abundant in the peripheral tissue of the tumour, which appeared to contain the younger specimens, and of which there were only a few varieties. There was a more adult form, very often two discs together (Fig. 3), in which the radiating

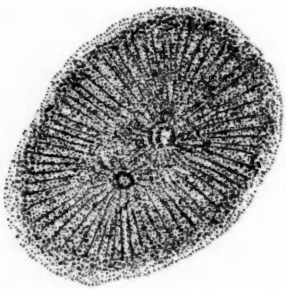

FIG. 3.—Double Discs of Adult *Actinomyces*.

filaments, starting from the central discs, were not so slender as in the other example, were of various lengths, and the punctiform dilatations at the end were also larger and more numerous. These dilatations, which may be considered conidia in process of maturation, were found in some preparations so developed as to look like true spores, and by their number and minute size they might readily become the active agents of dissemination, far and

near, of the micromycetes in the tissues. The other form of *Actinomyces* was composed of a central irregular, or round disc, light-yellow or olive-tinted, and granular, from which proceeded rays much larger than in the preceding forms. In some of the specimens these rays were approximately equal in length, and altogether the *Actinomyces* did not look unlike the flower

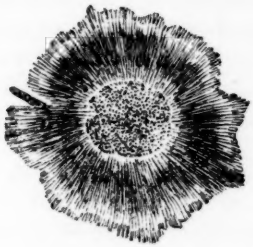

FIG. 4.—Marguerite-shaped Disc.

Marguerite (Fig. 4). In other instances, the length of the single filaments varied remarkably: while some of these projected only a short distance from the central disc, others extended in a direct or flexuous manner right into the surrounding necrobiotic elements. When by pressure the *Actinomyces* could be separated from each other into single filaments, and these were highly magnified, they were found to be flexible rods, each terminating in a lance-like bulging, or in an angular, single, bifurcated, or trifurcated extremity with a rounded apice. When yet more highly magnified, there was seen in the centre of each filament a fine axial line, either entire, broken, or in points or dots.

Vachetta terminates his observations by remarking that though the canine species has hitherto shown itself refractory to experimental inoculation, yet this instance proves that it may suffer from the accidental disease; that the fungus may present slight variations in form, not only in the different species of creatures in which it has been found (man, ox, pig, horse, and dog), but also in individuals and in the different neoplasmata, as is shown by the representations given of it under these circumstances. He was doubtful as to the channel by which it found its way into the tissues—whether by an excoriation, ulceration, or fissure in

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the gums, or (which seemed more probable) rather by an ulcer or fistulous opening at the lower margin of the jaw.

Subsequent to the date of Bollinger's published observations, Johne had examined thirteen of these cases of myeloid Actinomykosis of the jaws (presumably of cattle) ; ten of these were fresh specimens, and three were old specimens preserved in spirit. Eleven were of the lower jaw, one of the upper jaw, and only one of both jaws. All had evidently a central origin (*centralen ursprung*), though in some cases the disease may have commenced in the periosteal tissue. He describes cases of myeloid Actinomykosis belonging to the former, and periosteal Actinomykosis denoting the latter. He also mentions a case of Fibro-sarcoma of the lower jaw of an ox, in which the tumour was the size of two fists, round, fungous, and fibrous, and which arose from the alveolar periosteum of the middle incisors ; it lay beneath the mucous membrane, and produced great thickening of the lip ; another instance of fibrous tumour of the gum, apparently of new formation, the size of a hen's egg, which grew from the periosteum at the interior aspect of the junction of the two portions of the lower jaw, at the lower half of the alveolar border. The stroma of the tumour was three millimetres thick, and the mass, like that of the last tumour, contained "nests" (*nester*) of *Actinomycetes*. He likewise alludes to an apparently fibro-sarcomatous tumour on the margin of the gum of the lower jaw of a pig : a tumour about the size of a pigeon's egg, involving the tongue, and springing directly from the periosteum on the upper surface of both branches of the jaw. In the more dense fibrous tissue, less in the spongy stroma, were many conglomerations of nodules the size of a millet-seed, containing the *Actinomyces* in clusters, many of which were calcified.

Actinomykosis of the Fauces.

The disease generally appears in this region in the form of submucous new formations, or polypi, which have been classed with the Lymphomata or Lympho-sarcomata. They are round, fungous, or spongy tumours, covered by apparently normal mucous membrane. There are sometimes several in this situation. They present the same features, histologically, as the nodules in the

tongue. Hitherto they have only been found in the ox. Johne describes one of these polypi obtained from the fauces of an ox, as about the size of a fist, round, fungous, and soft, covered by normal mucous membrane, rising from the right side of the cavity, a short distance behind the tonsil. On section, it showed five isolated, round, and generally fine spongy nodules, the size of a walnut. All of these contained conglomerated masses of the fungus.

The symptoms are generally difficulty in deglutition, and even in respiration, with cough, when the tumour is near the laryngeal opening. These tumours may also be the indirect cause of Broncho-pneumonia, through their diverting the food into the air-passages.

As has been said, tumours and abscesses are rather common in this cavity in the ox tribe.

Actinomykosis of the Nasal Chambers.

The only cases on record, so far as I can ascertain, are those described by Mr. James, and referred to at the commencement of this paper.

Actinomykosis of the Larynx.

Similar tumours to those observed in the fauces, are found in the region of the epiglottis and larynx. They are spongy in structure, and the characteristic nodules and *Actinomycetes* tufts are contained in the fibrous meshes of their structure. In the region of the larynx, these formations cause more or less disturbance and difficulty in respiration.

(*To be continued.*)

CEREBRO-SPINAL MENINGITIS IN THE HORSE.*

BY H. F. JAMES, STUDENT, ONTARIO VETERINARY COLLEGE, TORONTO, CANADA.

PROBABLY at the present time there is no disease regarded with wider-spread interest by the profession and horsemen generally of the United States and Canada, than the one known as Cerebro-

* A thesis read at the weekly meeting of the Association in connection with the Ontario Veterinary College.

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Spinal Meningitis. Its very obscurity and ill-understood nature, together with the paucity of literature bearing upon the subject, have further tended to deepen that interest. Feeling that my own experience of the disease was too slight to be of much value, and not having much faith in mere theoretical expositions of its nature, I corresponded during the past summer with several leading American practitioners who have had long practical experience of this malady, and to their replies, given with the greatest kindness and courtesy, I am largely indebted for the compilation of my paper. With this preliminary I will now proceed.

Cerebro-Spinal Meningitis may be defined as a malignant fever of the epizoötic class, resulting from a specific poison, which produces exact results, modified in degree in different cases, and characterized by profound disturbance of the central nervous system. Though this fatal disease has been noted in the human race since the fourteenth century, it is only during the last thirty years that its occurrence in the equine species has been brought prominently before the public. Of late years, since the attention of the profession has been called to its existence in the horse, it has been recognised in places far distant from the Eastern States of the American Union, to which locality the disease was formerly thought to be peculiar. Two years ago the English veterinarians first made its acquaintance, though it is said to have been prevalent in Ireland at various times previously, and, according to some, it has been seen in far-off India. Returning to this continent, we find that Professor Smith has met with the disease on Canadian soil; and Dr. Holcombe, I.V.S., U.S.A., believes that it probably prevailed as an enzootic in the Indian territory a few years since. Thus, at present, we cannot accurately lay down its geographical limits; probably it occurs in the sporadic form in nearly all countries, but it is only in the United States, as yet, that the disease has taken on an epizoötic character. The tropical regions proper have hitherto escaped its ravages in the human subject, and are believed to be exempt; perhaps the same may hold good of the horse.

Etiology.—Its etiology is shrouded in mystery; age and

external conditions of life, which have so powerful an influence in the human being, exert no appreciable effect on its development in the horse. It is met with alike on low-lying marshy ground and on high plateaux; occasionally we find mares attacked in larger ratio than geldings, but this is just as frequently reversed. Atmospheric influences have been called into account for its occurrence in the epizootic form, and may possibly be concerned in the distribution of the virus. Though isolated cases may be met with at any season of the year, it is essentially a disease of the cold months. It has been pointed out that the most severe outbreaks take place in early spring, when the sun is warm enough to thaw the ground during the day, and so release the poisonous germs, though the weather is still too cold to allow of the stable-doors and windows being left open for ventilation. This state of affairs causes a great accumulation of poisonous matter in the stables, which produces its results in due time. In the Canadian outbreak, Professor Smith traced the cause to impure water; on remedying this no more animals died, but next year, after watering at the same place, the disease again appeared. This appears to be conclusive evidence that it may be produced as a dietetic disease, and most probably a great many sporadic, or localized outbreaks, might be found to have a similar origin. In the November number of the *American Veterinary Review* is an article by Dr. Michener, on what in his locality is called "Choking Distemper," and also "Convulsive Ergotism." In this particular instance, over forty horses were fed on sour brewers' grains, and every one died from the disease. On being fed to cows, these grains did not produce any deleterious effects. He also mentions the case of a farmer who lost five horses from feeding on musty oats; some of these oats being fed to horses in Philadelphia, killed them in like manner. Dr. Michener believes it to be due to fungus spores floating in the air, or adhering to the feed, and proposes to call it "Fungosus Toxicum Paralyticus." By some it has been included among the neuroses or functional disorders of the nervous system, without typical *post-mortem* appearances or anatomical characteristics. Without doubt, the debilitating effects of bad ventilation, overwork—especially night-work—

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and sickness, afford a good opportunity for its development; but in the epizoötic form we must admit the existence of a specific blood-poison, having a special affinity for the nervous centres. Frequently we meet with the disease in horses enjoying the best sanitary conditions, and even attacking them in preference to weaker animals; such has been the experience of many practitioners. It was formerly regarded as of malarious origin, but the inefficacy of quinine disproved that idea. Some years ago, Professor Large, of Brooklyn, advanced a theory which, to a large extent, has influenced the therapeutics of Cerebro-Spinal Meningitis ever since. He regarded it as a specific blood-poison affecting the ganglionic or sympathetic system of nerves, the toxic effect of the blood producing a condition of vaso-motor paresis, and the train of symptoms being due to the loss of the governing power of the circulation—in a few words, a paralysis of the sympathetic system. Its infectious character seems to have been indicated in a few instances in the human race; but in the horse it is usually regarded as non-transmissible, and dependent on some generally-acting cause.

Symptoms.—The symptoms vary with reference to the accumulation and multiplication of the virus in the system, and the portion of the cerebro-spinal axis immediately affected. At the commencement of some epizoötics, the fulminant form often prevails; the animal, with such slight premonitory symptoms as to be overlooked, wobbles in his gait, goes down; furious delirium alternates with coma, the breathing is stertorous, and he soon dies from rapidly progressive paralysis. In a few cases, and those mostly of the above-mentioned type, the animal, after slight twitchings of the muscles, is suddenly seized with opisthotonos or emprosthotonos, a slight degree of trismus being occasionally present, or the lips are twisted to one side. In a few instances, general rigidity of the muscles of the hind-quarters has been observed. These phenomena arise from the exalted condition and perverted distribution of nervous energy; but this state soon passes over, and perfect enervation prevails. The undoubted occurrence of tetanic spasm in the horse in this disease is interesting, as some medical authorities have thought that the opisthotonic attitude so frequently assumed by children when

suffering from Epidemic Meningitis was purely voluntary, and the one which gives most relief from pain. But we must not imagine that Cerebro-Spinal Meningitis is characterized by tetanic spasm, for this only occurs at the onset, and even then is met with in a minority of cases. Usually the observer is struck by the utter prostration and depressing effects of the poison on the animal economy; the muscular system is entirely flaccid, and there is a laxity of every function. In the majority of cases, however, there are certain early premonitory symptoms of the oncoming disease. The horse appears dull and indifferent to surrounding objects; he droops his head, and shows symptoms of more or less severe headache; the appetite is poor; if in a team he lags behind, the gait becomes staggering, and the hind-legs "plait," as it is termed. Some local paralysis may now be noticed, such as lopping of the ears, or loss of prehensile power in the lips, accompanied by slavering. Difficulty in deglutition is present in every case, and is often the first symptom noticed. Mastication is very slow, and in drinking the nose is dipped nearly to the eyes in the water, and although he appears to drink readily, yet little is taken. Often this difficulty in deglutition leads to the practitioner being called to see a case of "sore throat," as it is thought to be by the attendant. This important symptom arises from the animal being unable to "trough" his tongue, through partial or entire paralysis of the muscles controlling that organ. Frequently the first symptom shown is a loss of muscular power in the tail; you can readily turn it up over the croup *without resistance.* It is very imperfectly used to brush off flies, scarcely reaching the flanks, and often not used at all where sensation is much impaired. Some cases are ushered in by an attack of Colic, apparently neuralgic in character; such patients require very careful watching in an epizoötic. *Congestion of the retina, as seen with the opthalmoscope, is one of the earliest, if not the* FIRST, *evidences of the disease.* In from a few hours to four or five days the animal becomes comatose, but at any time during the ordinary course of the disease he may be easily aroused, though sometimes becoming very much excited when disturbed. The somnolence or apathy may persist throughout in some cases, but is more frequently alternated

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with delirium, which is sometimes so violent as to render it dangerous to approach the animal. Such cases generally die in a mad state. The pulse is not much altered, but is usually weak and soft; in fact, the capillary circulation is *sometimes* so slight as to lead to extensive sloughing of those parts that come in contact with the ground or slings. In acute cases the pulse is often extremely fast and irregular, but in the experience of most practitioners never "*wiry*," as stated by Lyman in "Williams' Practice." The temperature in typical cases is about, or below, the normal; but in some protracted cases a few hours before death, and in fulminant cases living only a few hours, we may find it run up to 105°. Bed-sores may cause a rise of 1°, but, excepting in the above case, a high figure usually points to lung complications. The bowels share in the prevailing torpor, and are usually inactive; retention of the urine readily occurs from paralysis of the bladder; hæmaturia may be present early and late in the disease, nearly pure venous blood being passed in some cases. Sexual excitement is nearly always present in mares and stallions; priapism has been noticed in the gelding. They frequently struggle violently while in the slings, and sometimes a patient will astonish you by turning a complete somersault. Rudimentary forms, in which difficulty in deglutition and lumbar weakness are the most constant symptoms, occur on the outskirts of epizoötics. Fatality is in ratio with the sudden or gradual development of the symptoms. In cases which recover, the acute symptoms are over by the eighth or tenth day, as a rule. Death usually results from coma. Young and vigorous animals recover quickest; relapses are common, and the practitioner should always be very careful in making a prognosis in horses past their prime. As the animal improves he becomes brighter, delirium ceases, and the intervals of coma are lessened. In nearly all cases he gains flesh while in the slings. Dr. Rogers, of Gloucester County, New Jersey, informs me that two of his cases, apparently progressing favourably towards recovery, died of true apoplexy, in each instance the clot being thrown out at the base of the brain; and in one case a horse, aged nineteen years, producing in a beautiful manner the respiration similar to that seen after section of the pneumogastric nerve. The para-

plegia, which persists in many cases after the animal is otherwise restored to health, is the bugbear of American practitioners; it often lasts for months, resisting every method of treatment.

Diagnosis.—This is sometimes beset with difficulties, as shown by the fact that for a long time Cerebro-Spinal Meningitis Azoturia, and Paraplegia were regarded as one and the same disease. But the diagnostic points have been pretty well settled by close and scientific observation. Occasionally it may be confounded with the nervous form of Influenza; the occurrence of convulsive fits, coma, and lumbar weakness may be associated with *real sore throat*, cough, discharge from the eyes and nostrils, high pulse and temperature. Such cases may most probably be referred to the specific blood-poison of Influenza, acting more especially on the nervous system. Azoturia is frequently mistaken for it, but there is an absence of the hard and *board-like* condition of the gluteal and femoral muscles seen in the former disease. There is not the pain, the high febrile condition, and excessive sweating over the hind-quarters as seen in Azoturia. You may have bloody urine, as I have already said, early and late in Cerebro-Spinal Meningitis; the urine may be dark, and loaded with urea or its analogues; but you will not find the coffee or chocolate-coloured thick grumous discharge, loaded with albumen, and often with casts, that you find in Azoturia. The previous history of the case, the idleness and high feed, the fact that the animal frequently goes lame on one hind-leg before showing the more acute paraplegic symptoms, together with the absence of that early onset of coma and difficulty in deglutition seen in Cerebro-Spinal Meningitis; all these will help the careful practitioner to form a correct diagnosis. In Paraplegia, again, we have high febrile condition and pain, very different from Cerebro-Spinal Meningitis; the animal, as a rule, struggles about more; the hind-quarters remain immovable, and the horse nearly always gallops with the fore-limbs—a peculiar symptom never observed in the latter malady. We should have no difficulty in distinguishing it from Spinal-Meningitis, which occurs from well-marked causes at any season of the year. In simple Spinal-Meningitis, we have a full hard pulse, high temperature, perfect deglutition, and absence of retinal congestion. Sunstroke

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occurs at a different time of year to that in which Cerebro-Spinal Meningitis chiefly prevails; and the high temperature, peculiar dryness of the skin, occurrence on a hot day, and general history of the case, are sufficient to prevent us falling into error. No absolute distinction, as regards the symptoms, can be drawn between Epizootic Cerebro-Spinal Meningitis and the sporadic malady of the same name.

Post-mortem Appearances.—Though many pathological conditions of the brain and spinal cord have been described by various authorities, there is still a remarkable difference of opinion among the profession on the subject. Whether this arises from most *post-mortem* examinations having been made in fulminant cases, in which death occurred too quickly for local lesions to be developed, is hard to say. The same thing obtains in the human subject, and has led to its being classified by some among the *neuroses*, or functional disorders of the nervous system. Dr. Holcombe has never found any *post-mortem* appearances that were constant, and could explain its pathology. Dr. Very, of Boston, has made many autopsies, but never saw any lesion in the spinal cord or any of its membranes, beyond finding a little fluid, which he was satisfied was not the result of any diseased condition previous to death. Dr. Rogers says that you will usually find the membranes of the brain and upper part of the spinal cord more vascular than normal, with increase of serum in the sub-arachnoidean space and in the ventricles, and in some cases an abundant exudation of thick yellowish lymph on the base of the brain, together with œdema of the brain and cord; and that this loosening and separating of the nerve elements possibly accounts for the motor and sensory disturbances seen during the course of this disease. In those few cases which die of Apoplexy, the clot will usually be found at the base of the brain; its occurrence is interesting, as showing the passively dilated condition of the small blood-vessels. In England, Professor Axe found ten or twelve ounces of arachnoidean fluid, the pia mater brick-coloured and engorged, membranes of both brain and cord intensely congested and marked with blood clots, brain showing a similar condition, with some staining of serosity, with which it was infiltrated, and no softening; mucous mem-

brane of large intestines and villous portion of the stomach congested.

So marked were the latter lesions, that an analysis was made for vegetable or mineral poisons, but with negative results. Somewhat similar appearances were observed by Professor Smith in the Canadian outbreak. Others have noticed separation of the dura mater from the vertebræ in the spinal canal, by extravasated blood; embedding of the nerves, as they emerge, in sero-purulent exudation; pus in the central canal of the cord, and purulent infiltration of the pia mater in the lumbar region. The ecchymoses of the intestines are probably analogous to the purpuric spots seen so often on the skin of human patients suffering from this disease, and which, in them, gave to it the name of "Spotted Fever" in many places. Their occurrence gives strong support to the view that we have to do with a blood-poison, of whose nature, however, absolutely nothing is known.

Treatment.—Owing to our imperfect knowledge of the pathology of Cerebro-Spinal Meningitis, there necessarily exists considerable controversy as to the proper therapeutic measures to be adopted. Most empirics, not appreciating the constitutional nature of the disease, direct all their treatment to the throat and loins. Chloral hydrate and bromide of potassium have been recommended by some as valuable medicinal agents, especially in cases where delirium runs high; while others assert that the bromides have no effect on the larger domesticated animals. The combination of ergot with strychnine, belladonna, or chloride of iron, is highly praised by many; its use is especially indicated in those cases where hæmaturia is present. Dr. Very found that arsenic and atropine, placed on the tongue, yielded apparently good results; but in his opinion all treatment is guess-work. Acting on his theory that the disease was essentially a paralysis of the sympathetic, Professor Large gave belladonna throughout the active course of the disease, and also used it as a prophylactic; but the results of the preventive treatment by giving this drug, have been criticised with some reason by other veterinarians. Though used by most practitioners to a greater or less extent, many place no reliance upon it until the more acute symptoms have passed, and then only do they begin

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its exhibition. A grave objection urged against the use of belladonna by some, is its tendency to throw a horse off his feed, a thing we should especially avoid in Cerebro-Spinal Meningitis. Largely owing to the experiments of Dr. Holcombe, the employment of strychnine in the malady was commenced, and the good results obtained have led to its general adoption. It has a powerful influence on the nutrition of the spinal cord, and is of great value in both preventing and curing the resultant paralysis. Some give it after the acute symptoms have passed, in one to three grain doses; others, again, begin with large doses given by the mouth at intervals of one or two hours, even where opisthotonic or emprosthotomic symptoms are present, running up from two or three to six, eight, or nine grains of the drug at each dose. In acute cases, when the animal is down and unable to stand in slings, Dr. Rogers places all his reliance on hypodermic injections of morphia, but says you must push them until they produce *automatic movements simulating the act of trotting, and profuse diaphoresis.* He has never seen a case die where the drug could be pushed to this extent; but it will be necessary to give from forty to sixty grains in two or three hours, in order to get the desired effect. If after giving about fifteen grains, the horse sleeps quietly, though only for a few minutes, he finds it a favourable symptom. He gives tincture of matico and strychnine during convalescence. The opium treatment of Dr. Rogers seems somewhat similar to that adopted by Dr. Stillè, of Philadelphia, with great success in the Epidemic Meningitis of children. Stimulants, such as aromatic spirits of ammonia, alcohol, nitrous or sulphuric ether, are extremely useful at times, and must frequently be pushed to a considerable extent. After the more pressing symptoms have been alleviated, carbonate of ammonia, with ginger and gentian, given in bolus, will be found of service in keeping up the appetite. Most practitioners purge, under the idea that they have to deal with a blood-poison, and that it is their duty to eliminate it as quickly as possible from the system; but it is necessary to give half as much again of purgative medicine as you would do under ordinary circumstances. For my own part, I think those practitioners are right who consider depletive measures unadvisable in such a weaken-

ing disease. Slinging should always be resorted to when the animal can stand, as if not got upon his feet within twenty-four hours his chances are very poor indeed. A few pretend to treat cases, when down, by turning from side to side, but such a course is very unsuccessful. As to the application of counter-irritants, this is another disputed point, though condemned by many as absurd; the most successful practitioners use mustard to the spine, and even to the throat, and claim that benefit is so derived. Where delirium runs high, ice to the head may be of service, or this not relieving the patient, a good mustard plaster to the poll may have the desired effect. In many of these cases, hot and cold applications used alternately are found to answer better than either used alone.

In acute cases, where there is imminent danger of collapse, and in others where deglutition is impaired to such an extent that the animal can scarcely swallow at all, the plan proposed by Professor Smith is well worthy of a trial. A specially constucted tube, about twice as long as the ordinary catheter, but of similar diameter, is passed along the inferior meatus of one of the nasal chambers, and pushed on to the stomach (two catheters fixed strongly and smoothly together would answer in an emergency). Through this tube stimulants or other medicinal agents may be pumped, and even nourishment be administered. The action of the bowels should be solicited by enemas, and it will usually be found necessary to pass the catheter night and morning for some days. If unable to swallow, the vital powers may be kept up by whisky, eggs, milk, and gruel, given either by enema, or preferably by the tube.

When convalescent, if there is resultant paralysis, use a current of electricity strong enough to produce a sensation of pins and needles, applied to the parts three times a day, and *decreased* on the slightest sign of improvement; also try the effects of nervine tonics, as arseniate of potash, strychnine, and the preparations of zinc. Build up the system by means of vegetable and mineral tonics, and give iodide of potassium and gentle diuretics to promote absorption of any effusion which may have taken place. Laxative food, such as scalded oats and bran-mash, roots, apples, and linseed, should be given throughout the disease, and will obviate the tendency to constipation.

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Give exercise as soon as possible, being very cautious at first that your patient does not fall and hurt himself. It is a good plan, before taking him out of his stall, to alternately advance and back him a few steps, and then, with the help of two assistants to prop his hind-quarters in turning, you may move him off. If the weather is fine, a good sun-bath daily will beof great benefit.

Stimulating liniments, or cantharidine, bimodide of mercury, or tartar emetic blisters, may be applied to the loins for the resultant palsy; but many of these cases recover after unavailing treatment, when given a long rest and a run at pasture.

Whenever possible, especially in the acute stage, give your remedies hypodermically, and while employing the powerful therapeutics mentioned, such simple but valuable measures as hand-rubbing, comfortable clothing, and bandages to the limbs, should not be forgotten. A good deal more, in veterinary practice, depends on nursing than is usually thought by the laity.

When an outbreak occurs, a searching investigation should be made into the quality of the food and water; and even if nothing be detected, it will be well to completely change the diet. Defective ventilation or drainage should be remedied; and if many new cases occur, despite all sanitary precautions, remove the animals from the infected stables. Then thoroughly disinfect by means of sulphurous acid gas, liberated in large quantities by placing sulphur on red-hot iron plates; apply carbolized whitewash to the walls, and on returning the animals put them on a course of hyposulphite of soda. These measures, fully adopted, will materially lessen both the number and severity of the cases. Doubtless, in the near future, the subject of the diseases of the nervous system of our domesticated animals will receive that attention from the profession which its importance entitles it to. Within a comparatively recent date, catalepsy and locomotor ataxia have been observed in the horse; and as an inevitable result of domestication, we may expect that the list of these disorders will yet be greatly increased. Few veterinarians up to the present time seem to have had the inclination or opportunity to fully investigate the nature of Cerebro-Spinal-Meningitis; to the lack of sufficient data is due the meagreness of my paper, which I now draw to a close.

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NOTES ON CATTLE DISEASES IN THE PUNJAB, INDIA.

BY VETERINARY SURGEONS QUERIPEL AND NUNN, ARMY VETERINARY DEPARTMENT, RAWUL PINDI, INDIA.

BY the September issue of the VETERINARY JOURNAL, we are happy to find that this most important subject is now, through the intervention of the editor, attracting attention in official and also in professional circles. On this account we are induced to offer these few additional remarks, expressing, at the same time, a hope that the matter will be fully followed up, for in a country devoted so entirely, as India is, to agricultural pursuits, the matter should receive the most serious consideration at the hands of Government, as the losses sustained annually from epizoötics are at present enormous, and, owing to the apathy of the natives, they are likely to be continued until some legislation is brought into force. It may be said that the matter has until lately received but little or no attention. On this account the literature bearing on the subject is but scanty, if we except the Proceedings of the Cattle Plague Commission, assembled a few years ago, under the orders of the Government of India. It is, however, to be regretted that the *practical* results of this Commission were so few, as, with the amount of information collected, most useful and suppressive measures might have been brought into force. We fully recognise the difficulties which legislation on the subject is likely to meet with, but, at the same time, simple measures might have been commenced, which, had they been persevered with, would have resulted most beneficially in the prevention, or rather in preventing, the extension of those diseases which now decimate the flocks and herds of this country at regular intervals.

These diseases may be said to consist of—(1) Rinderpest; (2) Foot-and-Mouth Disease; (3) Anthracoid diseases, especially Gloss Anthrax and Splenic Apoplexy; (4) Smallpox in sheep; (5) Scab in sheep.

The following notes are the results of our own observations during the years 1879 to 1882, and we trust that members of the profession in other provinces and presidencies may hereafter be

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induced to add, from their own experience, any further information on what may be termed one of the most important subjects as affecting the Veterinary Department and also the agriculturists of this country.

The first serious notice of the matter taken by the Government of India was a severe outbreak of Cattle Plague, extending through the districts of Jhelum, Rawul Pindi, Peshawur, and Kohat, in the month of January, 1879. As this was during the first phase of the Afghan war, and further, as the line of rail only extended to Jhelum, from which place all supplies for the troops both in the Khyber and Kurram Valley were forwarded by means of bullock-carts, it will be at once seen that the prevalence of this fatal disease imperilled the lines of communication for both armies. The length of the lines of road to be traversed was 170 miles from Jhelum to Peshawur on the Khyber side, and about 240 miles to Thull, at the entrance to the Kurram Valley. These lines were worked by stages of about twelve miles each, and from a report received from the superintendent, it would appear that 267 bullocks died and 201 were sick from 1st January to 25th January. In the month of March it was determined to depute Veterinary Surgeon Queripel to inquire into the nature and extent of the Cattle Disease on the trunk lines of road north of Jhelum, and to suggest remedial measures. In accordance with his instructions, he proceeded and found that in ninety-seven villages in which cattle disease existed, 2,102 had already died. These statistics, however, from the want of system in recording the deaths, could be looked upon as being far under the mark, and from personal observations it was found that at least 80 per cent. of the animals seized died. In a report to the Local Government on the subject, after detailing the results of investigations made in various villages, the rules given in Appendix marked A were recommended to be translated and widely circulated to all infected centres.

One of the results of these recommendations was the appointment of six salutrees, or native farriers, on the trunk line of road between Jhelum and Peshawur. This number was afterwards, during the second campaign, increased to fifteen, which included three duffadars, or superintendents of various sections.

It will be noticed from the perusal of the rules that they were purely rudimentary. This was considered necessary, as at the time the people were in no ways prepared for more stringent measures. These rules also applied solely to the villages of the affected districts, but the chief object to be considered, in a military point of view, was the prevention of animals from infected villages coming in contact with those employed by Government on the lines of communication. Under orders of the commissioner or chief officer of the division, no animals from places where the disease existed were allowed on the trunk road, and sites were selected near the various encamping grounds for the segregation of all animals affected. These measures, although of the simplest nature, were so far effective that in the month of June, 1879, the disease may be said to have been arrested. The losses, however, to the farmers, especially in the Rawul Pindi district, were such that many men that were well to do before may be said to have become destitute. The ignorance and apathy existing amongst the farmers was at this time pitiable. In cases where Rinderpest had entirely removed every animal belonging to them, they, as far as their means permitted, replaced them, bringing them to the very spot on which their former animals had died, without taking the slightest precautionary measures. Other cases were known in which cattle were brought from an infected centre at a cheap rate and introduced into villages that had hitherto been free, the result being that the disease was disseminated all over the country. This alone would point to the necessity for some laws to be enacted, otherwise the losses must continue to be enormous.

In the report above alluded to, the fact that it was impossible to attempt the occision of affected animals, on account of religious prejudices, was considered ; but owing to the fact that the symptoms of most epizoötics in this country are much less marked than they are in Europe, we are enabled to do a great deal without having recourse to anything which would so offend the natives of India. This was fully proved by the success obtained from the measures adopted under the orders of Col. Hall, the Commissioner of the Rawul Pindi Division, in which isolation and strict attention to sanitary and hygienic measures were

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insisted on. These had become necessary from the fact that from December, 1878, to April, 1879, or in four months, no less than 30,513 head of cattle had died in one district alone. This brings the matter to the close of the first Afghan campaign, 1878-79. In September of the latter year, hostilities again commenced; it was then decided to form a military transport service for the conveyance of stores from Jhelum to Peshawur. To effect this, twelve stages, each with about 440 bullocks, were formed: this rendered extra and increased supervision necessary; the utmost care was taken to prevent the extension of disease to the line, and, by strict attention to orders, carried out by the salutrees and duffadars, most of whom were obtained from native cavalry regiments, all severe epizoötic outbreaks were avoided, if we except one which made its appearance at a stage called Dungerzai: this, however, was only Foot-and-Mouth Disease. This leads us again to remark that the virulence of epizoötics is not nearly so great in India as in western countries; in fact, if ordinary care is taken, but few cases of Foot-and-Mouth Disease should prove fatal. At the stage above mentioned, over 200 animals were attacked; of these only one died, and within three weeks from the date of the appearance of the first case, the disease may be said to have been arrested. This brings us now to the close of the second phase of the Afghan war, when the Punjab Government, recognising the necessity for veterinary aid, in order to check the ravages of cattle epizoötics, applied for the services of Veterinary Surgeon Nunn to be placed at their disposal. Since then he has been employed in endeavouring to suppress the various outbreaks which have occurred from time to time. The difficulties, however, which have to be met may be readily understood when it is taken into consideration that he has to act in a province the size of the United Kingdom; and further, that he is unaided by any legislation on the subject; further, of the fifteen assistants or salutrees employed during the war, thirteen were discharged, and only two remain to help him. The chief outbreaks since 1880 have been: 1st, in Kangra Valley and Kulu, from which may be said to have arisen the various outbreaks which decimated the herds of other districts subsequently. This valley is the chief tea-growing district of the north of India, and not only does

much traffic from Central Asia and Thibet come through Kulu into it, but tea and other produce is conveyed by two trunk roads from the valley to Jullundur and Umritsur—the nearest points on the line of rail. This traffic is solely by means of bullock-carts. It will be at once recognised that from a district so situated, in which Rinderpest exists, and wherein no laws restricting the movement of cattle are in force, the dissemination of the disease must be widespread. It is a matter for regret that no statistics exist from which any reliable information as to the death-rate can be obtained. From one report from the Assistant Commissioner, Kulu, it would appear that 500 head of cattle are known to have died in three weeks in a small extent of country, and from personal observations made whilst investigating the disease it is known that villages were entirely swept. In this outbreak it was reported that the mortality was also great amongst sheep and goats. From this centre may be traced most of the virulent outbreaks which from time to time have occurred in the Punjab, and, amongst others, we would name those that occurred in the districts of Sialkote, Gurdaspur, and Umritsur. In the first-named district it was clearly proved that the disease owed its origin to cattle purchased at a large fair held at Umritsur, between which place and Kangra we have already shown a large trade exists. If, therefore, animals are allowed to be sent from infected centres to these large fairs, at which as many as 100,000 head of cattle are collected, and from which they are brought and sent to all parts of the country, it will be seen how the disease must steadily and widely spread. In the district of Gurdaspur, which lies between that of Kangra and Umritsur, through which the trunk road passes, 1877 head of cattle are known to have been attacked from February to May, 1881, and of these 1396 are reported to have died. These statistics, whilst allowing us to form some approximate idea of the death-rate, cannot be implicitly relied on, as from the imperfect manner in which they are kept it is only too evident that many deaths take place without being registered.

In addition to the direct method by which the disease is spread, and to which we have above alluded, must be added that due to the traffic in hides. In a letter from the Financial Commissioner

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asking whether disease could be propagated through the importation of hides, he states, that he remembers meeting herds of bullocks with skins on the hills, and being told by the bystanders that they were cheap where they came from, owing to Rinderpest having existed there. From this it will be gathered how necessary it will be carefully to watch the traffic in these articles, as being indicative, when the trade is abnormally large, of disease existing across the frontier, mainly in Cashmere. But there is still another and perhaps more serious question as affecting the traffic in hides, and that is, that hitherto, during an outbreak of disease, the Chumars, or leather curers, being the lowest or most degraded caste of the population, have been allowed to remove the hides. The profit from this has been so large that it is confidently believed that they convey the virus from infected herds to surrounding and healthy villages, in order to increase their illicit gains—the fact that cattle poisoning by these people exists to a large extent in the Punjab is a well-established fact. This, therefore, would point to the necessity of prohibiting the removal of skins from carcases during the prevalence of any contagious disease.

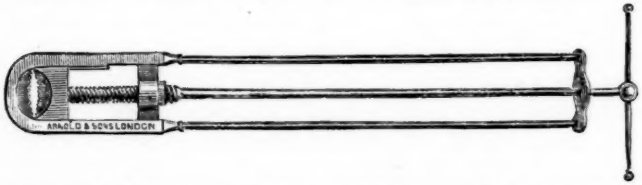
(*To be continued.*)

DENTAL SURGERY.

BY W. A. EDGAR, M.R.C.V.S., DARTFORD.

HAVING used the instrument described below for the past three years, with considerable success, I venture to introduce it to the profession through the pages of the VETERINARY JOURNAL.

Its general outline is depicted in the accompanying woodcut.



By the central screw motion, an enormous cutting power is obtained with a very small amount of steel, which greatly reduces the weight of the instrument—an important point for obvious reasons. The cutting edges are made tooth-like, the points con-

verging at the centre; and being very sharp, they obtain an immediate and immovable grip upon the portion of tooth to be excised. By digital manipulation, the size of the tooth is calculated, and the instrument screwed up before insertion into the mouth. This makes the actual operation much quicker, and prevents the animal becoming impatient. An even section is made in the *actual direction* in which the incisor is *adjusted;* and the instrument will remove the hypertrophied portion of *any tooth.* Its action is most humane, the operation being, so far as I have been able to form an opinion by the quietude of my patients, perfectly painless. There is no risk—as with the shears—of cutting the buccal membrane, or gingivæ, in excising a posterior molar. In this case, if the mouth, from the extreme length of the tooth, cannot be sufficiently opened with an ordinary mouth-iron, the leather mouth-expander should be used. The incisor is manufactured by Messrs. Arnold and Sons, West Smithfield, London.

ANTHRAX IN CACHAR AND MANIPUR, INDIA.

BY J. GRIFFITH EVANS, M.D., ARMY VETERINARY INSPECTOR, MADRAS.

(*Continued from page* 38.)

48. There are, I am told, many more ponies in the town and district of Sylhet than there are in Cachar, because it has a larger population and the natives are much better off, for which reason also there is a larger proportion of them stabled. The stables of the natives at Sylhet, however, so far as I have seen, are in a far worse sanitary condition, especially the flooring, than those of Europeans in Cachar and the Brahmaputra Valley—where Anthrax has been.

49. *Bad Sanitary Conditions are not enough to cause the Disease unless the Specific Virus bearing Organisms or Spores are present.* —From the above description it appears that the geological formation, with recent alluvial deposits and swamps, the water conservancy, and the stable management of Sylhet town and district, are as favourable as anywhere else for Anthrax; yet the disease is not known there. We may infer from this that the saturation of the alluvial soil of the stable floor with urine, a fearful amount of ordinary impurities in the drinking water,

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alluvial soil adhering to the roots of the doob-grass eaten, emanations from the retentive alluvial soil in pastures and from swamps, with favourable seasons and climate, will not of themselves, nor when all combined, cause the disease; some other element is still wanting in addition to all these in Sylhet. What is it? I do not know, unless it be the specific virulent Bacillus, which probably is not indigenous in any part of Assam, which probably was not introduced to Gauhati before the epizootic season of 1878-9, and which I suppose has not yet been introduced to Sylhet. Though ponies are constantly going from Cachar to Sylhet, I could not learn that one ever went with the disease in the system in the incubative or other stage, to die there. It is most probable that if the disease were so introduced into Sylhet, as we know it has been taken from Gauhati and Nongpoh to Shillong, it would remain and spread, for all conditions are more favourable for it at Sylhet than at Shillong. This is a very important point to watch in future.

50. *Prevention.*—I shall conclude by making a few remarks upon the subject of prevention, which is the main object in view always when investigating the cause. If it were practicable, I would first of all strongly urge a good system of drainage for the country, but at present that cannot be done. The next best thing is to pay great attention to sanitary laws in the stable management, keep the flooring dry and clean, let the ponies have the purest water available to drink, and good clean grass. When animals die of this disease, dispose of the carcases as I recommended in paragraphs 13 and 14 of my letter $\frac{B}{19}$ of the 3rd ult., great care being taken to prevent any of the blood sprinkling about, remembering always that the dead animal is much more infectious than the living in this disease. The latest researches of investigators in Europe, prove that the system may be protected against Anthrax Fever by inoculation with the virus modified by cultivation, and there is little doubt that in a few years hence it will be adopted in all anthracoid districts, as Cow-pox is used to afford protection against Small-pox. But at the present time the safest method of cultivation has not been determined, and I think it is premature to recommend its adoption in Assam, where there are no skilled veterinary practitioners to do it.

Editorial.

THE REGISTRATION OF EXISTING PRACTITIONERS.

As the selection for registration of those persons who are not qualified by the Royal College of Veterinary Surgeons to practise veterinary medicine and surgery in the United Kingdom, but who are provided for in the Veterinary Surgeons Act, now approaches completion, it may be well to make a few remarks on this subject, and more especially as some misunderstanding or misapprehension appears to exist with regard to the manner in which the selection has been made, and also as to the position of the persons who may ultimately be registered. As is well known, one of the objects of the Act is to prevent people who are not members of the Royal College of Veterinary Surgeons from assuming any name, title, addition, or description which might lead the public to believe they are Veterinary Surgeons, or practitioners of veterinary medicine, or of any branch thereof, the penalty for infringement being a fine not exceeding twenty pounds. The only exception made to this prohibition is in the case of those unqualified persons who had continuously practised veterinary medicine and surgery for a period of not less than five years previous to the passing of the Act; and in order to protect them from its penal operation, their names were to be placed on a separate register, under the heading of "Existing Practitioners." Previous to the passing of the Act, persons could assume the title of Veterinary Surgeon, and even that of Member of the Royal College of Veterinary Surgeons, as no law was in force to prevent this assumption, and therefore no illegality could be laid to their charge. To deprive them, therefore, of a designation which they had committed no legal wrong in adopting, and under which they had gained their livelihood, appeared to the Government not only a great hardship, but a positive act of injustice; therefore their exemption from penalty.

If the Royal College had been so remiss or supine in the past, as to allow a period of nearly forty years to elapse without obtaining legal protection for its graduates, it was considered that the consequence of this remissness should not fall upon the innocent, who at no time were committing an indictable offence by styling themselves Veterinary Surgeons in order to gain a livelihood by the practice of veterinary medicine and surgery.

But the Government, considerately for the qualified members of the profession and the public, made this exemption retrospective for a period of five years; so that those who were to be registered must have been in continuous practice at least previous to 1876. Registration was to be made without a professional examination, and on such terms as to payment of fees and other matters as the Council of the College, with the approval of the Privy Council, might direct, the applicants producing evidence of title to registration by statutory declarations of themselves and of other persons able to testify on their behalf, or such other evidence as the Council might reasonably require.

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A form for statutory declaration was drawn up by the Registration Committee appointed by the Council of the Royal College, as well as a form certifying to character and credibility, and these forms were issued to all applicants; care being taken to have included in them those sections and clauses of the Act relating to registration, and particularly the section referring to obtaining registration by false representation. Of more than two thousand forms sent to applicants, less than one thousand have been returned filled up, and from these selection for registration will be made. It will thus be seen that every care has been taken to interpret and to carry out the spirit and letter of the Act, fairly and honourably, to all those whom it affects in this matter of registration. Claimants for registration in the separate register, if they will have procured registration by means of a false statutory declaration, are liable to a very heavy penalty at any time, and to removal of their names from the register, while those who aided them by certificate are equally liable to punishment. After the declaration they have made, it is evident that equally strong proof of their disability must be produced, in order to prevent registration; as having the right of appeal to the Privy Council should this be refused, it is necessary that the Council of the Royal College should be prepared to give good reason for its refusal, and not any mere hearsay or trifling evidence.

The important question as to what effect this registration will have upon the profession has been mooted now and again, and it has also been answered on several occasions in these columns. The profession will be none the worse through the registration of those persons who do not belong to it. Registration simply protects them from the penal operation of the Act; it does not confer upon them any qualification whatever, neither can the Royal College or the public recognise them as anything different from what they have always been. The College is in no way responsible for them or their actions, and it cannot be; it cannot certify to anything with regard to them, except that they are not of its members—a fact which is also rendered apparent by their appearing in a separate and special list.

At the same time, it is well to remember that many of these persons are held in good esteem, not only by their employers, but also by members of the profession, who have amply testified to their moral and professional character. They have certainly obtained much public sympathy in their efforts to preserve themselves from starvation and extinction, and it would ill become the Royal College—now that it has obtained such valuable privileges through the Act, to constitute itself a persecuting body, and seek to punish those who have committed no offence, but who years ago had only availed themselves of an opportunity offered by the indifference or neglect of the College itself, to assume a professional title and functions, and gain a livelihood thereby.* Six

* As evidence of the strong sympathy these persons received, and the kind of opposition the Veterinary Surgeons Bill had to encounter in Parliament, we quote a sub-editorial which appeared in the *Daily Telegraph* when the measure had been introduced into the House of Lords. "Lord Aberdare, on Tuesday night, obtained a second reading in the House of Lords for a Bill which, as he explained, had for its

years ago this assumption was stopped, so far as new additions to the number are concerned, and the Veterinary Surgeons Act extinguishes it for ever. The profession can well afford to be generous and courteous towards the "Existing Practitioners," who are the last of their race; for if they have been allowed to survive so long the fault was not theirs, but that of the Royal College. Register number One, we hope, will continue to increase more and more rapidly every year, while number Three register will continually decrease, until it is finally a blank, and the circumstance that it ever existed will in time only remain to mark a momentous turning-point in the history of veterinary medicine in these kingdoms.

THE PART PLAYED BY EARTHWORMS IN THE PROPAGATION OF ANTHRAX.

In 1881, Koch and several other German professors published the results of their experiments with Anthrax, and these were in several points opposed to those obtained in France by Pasteur and others. In order to ascertain the truth with regard to this contradiction in most essential features of the disease, Feltz undertook a series of investigations which were brought to the notice of the Academy of Sciences in November last, and which confirm the conclusions arrived at by Pasteur.

Following the example of Koch, he mixed, in a flower-pot, a quantity of

object the prevention of the assumption of the title of veterinary surgeon by unqualified persons. No doubt Lord Aberdare is perfectly correct in saying that many persons now practise as veterinary surgeons who are without sufficient qualification for the profession. Accordingly he proposes that the law shall provide for the infliction of a heavy penalty on every person who holds himself out to the public as a duly qualified veterinary surgeon without first having become a member of the Veterinary College. The measure in that shape seems highly objectionable, and conceived in the interests of monopoly. A person who falsely describes himself as a member of the Veterinary College should most deservedly be liable to punishment. But competency in veterinary matters is not exclusively confined to members of the College. There are numbers of respectable individuals in this country, exercising the vocation of veterinarians, who justly enjoy an established reputation for knowledge and skill in such matters, but who have never gone through the curriculum of the College. Many owners of cattle prefer to employ such men to practitioners whose only claim to be selected instead is the possession of a diploma. The Bill, therefore, goes too far in declaring that no one shall call himself a veterinary surgeon without passing the College. It was argued in the House of Lords that the effect of the measure would be to raise the status of the veterinary profession, and thus induce a class of men of superior social standing to join its ranks. But farmers and other owners of cattle do not want to be restricted exclusively to the services of gentlemen who, to keep up a good social position, must charge considerably higher fees than those they now have to pay. A man who shows himself incompetent to perform the curative functions which he undertakes ceases to find employment, and in this way the public protect themselves from serious losses through ignorance or carelessness. And the College training does not necessarily result in a combination of intelligence and education, nor does it give the vast advantage of practical experience in the treatment of animals. Veterinary science has not reached a very high stage when it is unable to do more for the prevention of contagious disease than prescribe the slaughter of the animal affected and all others which have been in contact with it, the process of 'stamping out,' as it is termed. For this and other reasons the public will probably have to pay more without being better served, if the Bill now before Parliament passes without being considerably modified."

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earth with fresh Anthrax blood and the contents of several tubes of pure cultivated virus; on this soil he placed fourteen earthworms, which soon burrowed into it. Three weeks afterwards he took therefrom six of the worms, and these he washed carefully in distilled water several times. With the contents of these worms he inoculated six series of guinea-pigs (two in each series), and the same with the water in which he had washed the worms. All the guinea-pigs of the first six series died of Anthrax within three days, the majority of those inoculated with the first washings likewise succumbed to the disease, but those inoculated with the last washings remained unaffected. These experiments left no doubt in the mind of Feltz that earthworms play a most important part in the propagation of Anthrax.

In a new series of experiments, Feltz has applied Pasteur's procedure for the attenuation of Anthrax virus, and has obtained the same results.

THE NATIONAL VETERINARY ASSOCIATION.

WE would earnestly direct attention to the National Veterinary Association's claims upon the profession for support and patronage, as it is destined, if properly managed, to effect much good by concentrating the objects and efforts of the various Veterinary Medical Societies throughout the United Kingdom, and bringing them to bear in the direction most likely to command success. Meeting only once a year, and in a different centre at each meeting, the sacrifice of time would not be great, while the subjects to be discussed would be of such moment, either from a professional or public point of view, as to deserve the collective voice and weight of the profession, and thus ensure attention. Considering the vast amount of benefit which has been derived from kindred associations in other branches of science, there can be no doubt that if this association is adequately supported, it will confer similar benefit to the profession—individually and collectively—as well as the public. The Secretaries are Mr. Banham, Downing Street, Cambridge, and Mr. Penberthy, Royal Veterinary College, Camden Town, London. The first meeting takes place in London on the day following the annual meeting of the Royal College of Veterinary Surgeons.

Review.

ANIMAL PLAGUES: THEIR HISTORY, NATURE, AND PREVENTION. By GEORGE FLEMING, F.R.C.V.S., F.R.G.S., etc. Volume II., from A.D. 1800 to 1844. (London: Baillière, Tindall, and Cox. 1882.)

(*From "The Times" for December 26th*, 1882.)

Mr. Fleming's second volume takes up the History of Animal Plagues at the beginning of this century, and carries it on to 1844. The simple fact of a bulky volume being required for the enumeration and brief description of the best known calamities of this sort in forty-four years, with here and there a suggestion for their prevention or their cure, shows the vastness of the work. On a hasty calculation there are several thousand "plagues" noticed in the two volumes; and our readers are well aware that the thirty-eight years reserved for a third volume have not been unfruitful in old or new varieties of animal plague. The work is

necessarily one of those from the study of which we rise sadder as well as wiser. Our most abiding and most recurrent estimate of Nature is her incorrupt and unassailable purity, in comparison with man and all that man has ever made. We fly from our own selves to that Nature which never changes, but remains true to its sublime original. It is emphatically said that man made the town, and God made the country. Whatever that may mean, the volumes before us show no such difference. They establish a community between man and animals, proving the world akin. There is nothing to choose between us. Under the term "Epizoöty" appear to be included all ailments of an epidemic or contagious character that can assail man or beast. The use of the word "plague" in the title is a pardonable condescension to the vulgar intelligence. Even scholars might have been staggered by a term which, besides being hard to spell and harder to pronounce, is neither English, nor Latin, nor Greek. The name matters not. The thing is legion. The greater part of Nature's realm, so fair and so peaceful as we suppose it, is in open array or in perpetual ambuscade for the destruction of the rest. All the larger, higher, and nobler forms of life, man included, enjoy their pre-eminence on the terrible condition of being the object of an implacable jealousy to myriads of lower and lesser forms. These watch their opportunity, and invade us at every point. They fly, they creep, they swim; they pierce, they burrow; they enter with our meat and drink, and with the air we breathe. We are never safe from them, and our only approach to safety lies in the knowledge that we are always in danger. Sometimes it is a combination of adverse influences, or one mischief coming upon another. In that case we are warned; we see the enemy approach; but even then we may be powerless to resist. Deluges of rain, excessive drought, long and intense frost, sultry air and overcast skies, every kind of excess or of shortcoming, combining with the steady advances of some exotic pest, may so arrange themselves as to act the part of a great general carrying out some irresistible strategy. More commonly, at least to our apprehension, these plagues are unexpected and inscrutable. We sit down to their investigation when the mischief is done, and hold a national inquest on our buried flocks and herds, our empty stalls, our deserted fields and poultry yards. The books that profess to advise the agriculturist how to cure all the ills that horse, cow, pig, sheep, or fowl are heirs to are a library. The wisdom of many generations is condensed into encyclopædias for the farmer's instruction. Yet from time to time there arrive pests—visitations as our simple fathers called them—that own no precedent and submit to no orthodox prescription. At the last case of the kind we had no better plan than to follow the example of the infuriated Grecian chief, by taking the knife in hand and massacring flocks and herds.

When man is so without resource and so often driven to the counsels of desperation, it naturally occurs to ask how far he is answerable for the mischief, and whether he does not at least aggravate it. No doubt man does contribute much to the causes, the predisposition, and the spread of contagion, and to the inability of the poor creatures to withstand the attack of disease. He overworks, he underfeeds, he houses ill, he neglects,

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he is too intent on what is due to himself to consider what is due to his brute associates. He exposes them to rapid alternations of heat and cold; he sends them on long journeys, perhaps from one market to another, or receives them after a like trial without a thought of their probable condition. He is often aware that he is running the risk of contagion, but he has made up his mind to run the risk. He buys from an infected herd, or sells from one to an unwitting purchaser. Nevertheless, upon the whole, and with Mr. Fleming's bills of mortality open before us, we may confidently say that man is the great friend of the brute creation, and that his dominion is a universal blessing. In fact, he peoples the world with brute as well as human inhabitants. By destroying the old tyrants of the wood and the plain, he enables the gentle herbivorous races to multiply and to enjoy life without excessive hardship and continual terror. He finds for them food when the ground is bare, water in the worst drought, and shelter when necessary. They have not to travel many miles a day for the chance of a blade of grass or a standing pool. It is true they are subjected to certain privations and thwarted in the exercise of their natural instincts, but they are happily constituted to suffer these wrongs neither much nor long, and even to find in human attention some compensation for them. In fact, and *primâ facie*, health, strength, and happiness are the normal conditions of all the animals enjoying human protection. They are before us continually, and, in physical condition, they well stand a comparison with the human race. Many and many a philippic against political tyranny and corruption, or the still worse oppression of dominant classes, has been pointed with the remark that man does better for his horses, his dogs, and his cattle than for his human labourers. Indeed, the whole agricultural system of this country may be regarded as one vast commissariat, instituted for the special purposes of rearing, distributing, dividing, and maintaining many millions of brute creatures in the best condition practicable. When the seeds of death do begin to show themselves in the air, or in the track of strange arrivals, then it is possible not only to contend with the foe at the port and on the road, but to convert every farm into a fortress, and place every county in a state of siege.

The death-roll is now a trifling percentage, not a moiety, or the total, as in olden times. We are apt to place the extinction of wild beasts high among the boons of civilization; but they have never been the worst enemies of the flocks and herds. The worst enemy has always been the ever-varying pest, minute and even infinitesimal in its form, and utterly inscrutable in its character, suggesting diseases of the air or the water, and suddenly decimating this or that part of the world of life, sometimes all together, man, beast, bird, and fish, the beasts and birds of prey, as well as their harmless victims. On turning over the sad records of universal suffering before us, we find it stated again and again that the bears, wolves, and foxes were seen unable to pursue or to devour their prey, and scarcely dragging their bodies wearily along. The badger, now sole survivor of the pachydermatous races, was seen overtaken by mortal agonies, and swarms of rats, that might be supposed proof against malarious influences, perished in their noisome haunts. Many a time the pure stream,

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fresh from mountain and meadow, has been covered and even clogged with masses of putrefaction, all that remained of its finny inhabitants, or of the flocks and herds that had fallen into the water as they vainly tried to slake their thirst. In the face of these records it is impossible to deny that man is a great benefactor, and that our own fair isle owes to him that it wears the look of a paradise, and everybody desires to live and die in it if he can. Man, indeed, with all his domineering, selfish, and destructive qualities, appears in nature as the great physician, with his eye on the sudden symptom or the known predisposition, and continually supplying from his own superior knowledge the deficiencies of that animal instinct which is itself a miracle, but requires the miracles of human science also. It is, however, the one point on which amateur agriculturists or theoretical agriculturists are sure to find themselves most deceived. Though fully aware of the frail tenure and the delicate conditions on which man retains his own health and strength, they fancy it otherwise with the brute, as if creatures that cannot take care of themselves must needs fare better than those that can. The veterinary's bill, and perhaps a few serious casualties, soon dispel their pleasant dream. They find they have a large and often a sick family on their hands, and that, with the right of adoption, there comes also an unexpected catalogue of parental obligations. They have to physic and to nurse the various occupants of the farm as carefully as their own children, always with the disadvantage that the poor sick brutes are as babes, that cannot explain their sufferings or give any help to their own cure.

The work is in its nature and design a great storehouse of facts, suggesting many problems, and, as we approach nearer to our own times, helping to their investigation. Have there been "plagues" without a physical cause? Have some come and gone, leaving no trace behind, and never again to appear in the same type? Have some been congenital, so to speak, with the species liable to them, remaining to-day what they were at the beginning? Has the medical art, or better husbandry, or civilization itself, extinguished any of these plagues, as some fondly hope it has extinguished that terrible one which has long monopolized the name? What progress are we making against all the enemies leagued against our pastures, our stables, and our farmyards, as well as ourselves? Certainly the life of man has been made longer and pleasanter by the combined efforts of medicine and good government. Has the brute prospered equally? As we turn over these annals, commencing in the haze of myth and coming down to the first years of Queen Victoria, we may feel an ever-increasing confidence that man has gained, and is still gaining, on the common foe. But the greater his power the greater his responsibility. As he can keep out the miasma, the pest, the swarm, the flying sporule, and the mischievous weed—as he can employ many purifying elements placed all around him, it is his own fault when the invaders force his defences or creep in unawares.

As it would be vain to attempt to follow Mr. Fleming through the vast field he opens to us, we must content ourselves with a single instance, painfully familiar to many of our readers. Among the epizoötic diseases of cattle, Pleuro-pneumonia has caused the greatest losses,

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and raised the most inquiry in our times. There appears to be no description of animal plagues sufficiently exact to be identified with this type till about two centuries ago, though we cannot doubt its existence long before. But even the earliest record Mr. Fleming regards as doubtful. In 1691 there was an eruption of Mount Etna, with earthquakes in Western Europe, and locusts in Germany. The next year there was great disturbance in the order and character of the seasons, culminating in a terrible mildew and blight that lasted three years. These were but precursors :—

"In Hesse, from 1693, Valentine describes a pneumonic affection among cattle, which killed great numbers. He says, the preceding winter being wet, but towards the close very cold, at the beginning of spring an unusual heat set in, and continued throughout the whole summer, which sudden change produced an unequal and unnatural motion of the humours and breath, followed by death to man and beast. Oxen and cows succumbed in numbers. Among other causes, a corrosive dew, which spotted linen with marks more or less dark-coloured and corroded everything, was supposed to produce ill-effects. From the observations of the butchers, it was proved that these animals died from pulmonary Phthisis, to which no doubt the severe cold after the intense heat much contributed. At the end of July and the beginning of August, besides Dysentery and malignant fevers, a certain intermittent fever, like Tertian Fever, attacked man. Wirth and a few other veterinary writers have imagined this outbreak to be an epizoöty of contagious Pleuro-pneumonia ; but there is every reason to doubt the correctness of their surmise. That malady was not known for certain till a later period."

Again, the year 1713 was most unpropitious for man and beast—indeed, for all animal life. The wild creatures suffered with the tame. Besides a new plague of mice, that alone seemed to profit by the general destruction, the "Cattle Plague," distinctly so described, raged over Europe. According to Wirth, the epizoötic Pleuro-pneumonia of cattle was present in several cantons of Switzerland and in Swabia in this and the following year. The seasons again fell out of order in 1725. The summer was exceedingly wet and damp, and the following winter cold and long. It was a year of blight, the like of which had never been heard of in England. The next year was exceedingly dry and hot. Honey-dew and rust were very abundant in the crops and forage, and this was regarded as the cause of the great mortality among cattle. The deer perished in numbers, and even the fish. On the authority of Wirth, Mr. Fleming states that the Pleuro-pneumonia (bovine) spread everywhere in Switzerland and in the neighbouring countries. It appeared in Switzerland again in 1764. In the year 1769, after a rainy year and a bad harvest, there was much disease of the sort arising from unwholesome food. Among other apparent consequences was the following :—

"Over a wide extent of the north of France an epizoöty was doing much injury to cows and horses. It was named in Franche-Comté *murie*. In Hainault and Champagne it was particularly noticed. At Avesnes it first broke out among the horses of two regiments of dragoons stationed there, and from thence it extended among the cattle in the Election of Joinville. Cough, high fever, and prostration were the first symptoms ; after these appeared nausea, suspension of rumination (if in cattle), the breath fetid, the mouth hot and dry, discharge by the nostrils of thick, foul-smelling matters ; but a continuous cough, feebleness, great difficulty in breathing, redness of the eyes, dryness of the tongue and mouth, loud *râles* in the air-passages, the breath becoming more fetid, all indicated the approach of death ; their absence gave tokens of a favourable recovery. An autopsy revealed congestion, lividity, and ecchymosis

of the lungs, with abscesses or gangrenous spots on their surface, and flakes of gelatinous matter of various colours. In the texture of the lungs were found purulent infiltrations, which broke up the structure of the lobes. These organs adhered to the pleuræ, which often looked thickened, inflamed, suppurating, or gangrenous. Considerable effusions of reddish, putrid, foamy fluid were found in the thorax, and sometimes pus, etc. It was thought that the origin of the epizoöty was due to the variations in the atmosphere, cold and heavy rains, the sudden transition from hot stables to the cold air, or exposure to these rains. It was termed an acute inflammatory fever, or false malignant peri-pneumonia. This disease, it is added, though annual and familiar in our climate, often even epizoötic, is scarcely believed to be contagious; prudence, nevertheless, should make us act as if it were. The ventilation of the stables should be well attended to; sudden removal from heat to cold should be avoided, and the sick animals ought to be kept in an equable temperature, and have only tepid gruel to drink. The symptoms were supposed to indicate a gangrenous inflammation of the lungs. The Veterinary School at Alfort was consulted, and some of its pupils were despatched to the districts where the disease was most deadly. The measures they proposed had the happiest results, for whereas, before their arrival, the animals were dying in crowds, they were now able to save 140 out of 160."

Upon this Mr. Fleming observes that the *murie* could not be bovine contagious Pleuro-pneumonia, inasmuch as horses as well as cattle were attacked, and the proportion of recoveries by medical treatment stated above is never reached in the deadly lung disease of our days. In the year 1745, says our author, the immortal Haller published his investigations on the nature of an epizoöty which had several times been observed in Switzerland. The great physician thought it was the Cattle Plague (then committing extensive depredations), but no one can read his description of the Swiss malady, Mr. Fleming observes, without surmising that it is a different disease, and in all probability the bovine contagious Pleuro-pneumonia. Such an authority, he proceeds to say, needs no apology for being quoted, especially as his preventive measures are worthy of notice, and would have saved this country a great loss had they been adopted in recent days. For the copious quotations themselves we must refer to the book, as they are too long for these columns. In explanation of the mistake he ascribes to Haller, Mr. Fleming observes that the Cattle Plague and bovine contagious Pleuro-pneumonia were generally co-existing, and that while Switzerland was free from the former it appeared to be the permanent seat of the latter, both the immunity and the liability being attributable to geographical causes. It has been several times observed in visitations of Cholera in our own country, that where there was not Cholera there was Typhus Fever, or *vice versâ*. About 1779, contagious Pleuro-pneumonia, now thoroughly ascertained and distinguished from other cattle plagues, showed itself in Upper Silesia and Istria, holding its ground for many years, and spreading to Bavaria, where it continued to reappear far into this century. The wars of the French Revolution drew large quantities of cattle from the neighbouring countries, and the result was the prevalence of this epizoöty in Dauphiné, the Vosges, and Piedmont, and up to Paris itself, that city becoming in its turn the centre of contagion, following the track of the Revolutionary armies. From this time, for a quarter of a century, there was seen all over the Continent that sequence of pest upon war noticed by the historian of the Peloponnesian War. Contagious Pleuro-pneumonia appeared in Italy in 1815. Under 1822, Mr. Fleming says:—

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"Before this period, according to M. Tisserant, bovine contagious Pleuro-pneumonia was entirely unknown to the department of Ardèche, France; but in this year it made its appearance there. It would seem that at this time oxen were, for the most part, employed to tow the boats trafficking on the Rhone between Lyons and the sea, and that the majority of these animals came from Franche-Comté. In winter, when the river traffic was less active than at other seasons, these bullocks were depastured on the mountains in the neighbourhood. In 1822, a certain number of them so depastured were found to be diseased, and these propagated the malady. Nevertheless, it being winter, and the native cattle nearly all kept housed, without much communication between the stables, the contagion did not spread to any great distance, and was not long in being eradicated. It appeared, however, again in 1847."

Four years after, Mr. Fleming notes a similar instance of contagion from the same offending source:—

"Bovine contagious Pleuro-pneumonia appears to have been entirely unknown in the department of the Nord until 1826. According to M. Lecoq, it owed its introduction to the following circumstance:—This rich department, in order to have its surplus forage profitably utilized, purchased every year in Franche-Comté considerable droves of cattle; and as the disease was present in that region, these droves carried the deadly contagion from their native mountains. For several years it apparently only affected cattle which were strangers to the department; but the disease gradually spread among the indigenous herds, and is now enzoötic among them. It has occasioned most serious losses."

From France the disease passed into Belgium and Holland:—

"This insidious plague was imported into Belgium as early as 1827, and proved a dreadful infliction on the Belgian farmers, travelling from place to place, till the whole of Flanders was invaded. It has been remarked that no country ever suffered so much from this malady as Holland. It received the infection in 1827—before the separation between it and Belgium—in the, at that period, southern provinces of the kingdom, particularly in Brussels, Mechlin, Louvain, and Diest. At a later date it showed itself in Hainault and West Flanders, and in the year 1833 it appeared in all its malignity in what we now call Holland. In that year it broke out on a farm in Gelderland, and from this centre it spread over the whole country."

In 1831 the disease appeared in Seine Inférieure, and increased till 1839. It was very deadly in Lombardy about 1836. It caused great havoc in Holland from 1837 to 1839. No fewer than 28,489 head of cattle were lost. The Government gave compensation to the amount of thirty golden florins for every animal destroyed to stay the contagion, and in this way spent 678,089 florins. At the same time it was causing great losses in Lithuania and as near home as the Pas de Calais, in the marshy meadows south of Boulogne, in the department of the Seine, and specially in the rich pastures of the Valley of Bray—the dairy land of Paris. It was noticeable that the disease did not penetrate Cotentin, La Vendée, Brittany, or Limousin. Professor Delafond was sent to Bray, and he drew up a *mémoire* of his investigations. It was now spreading from farm to farm and from one district to another in the Vosges department, where it was followed up, investigated, and described by M. Mathieu, and in the cantons Vaud and Fribourg, where it was elaborately described by M. de la Harpe, of Lausanne. Mr. Fleming gives long quotations from the *mémoires* written by these authorities, which leave in his mind no doubt of the highly contagious character of the disease, and fortunately as little doubt as to the efficacy of judicious and timely precautions against its spread.

Fortunately, too, these precautions are not of a difficult, costly, or out-of-the-way character. They are only such as common sense and humanity would suggest, and the only wonder is that it should be found necessary to suggest them. If the poor creatures are packed close in hot, stenchy, unventilated stables, and exposed the rest of the year to rapid alternations of heat and cold, or to damp meadows and low-lying fog, the only wonder is that they should require any contagion to catch a lung disease. At length, in the memorable year 1841, the contagious Pleuro-pneumonia, after establishing itself in the surrounding countries, now invaded this island. Arriving at Liverpool and other ports it made them centres of contagion. Wherever the diseased or barely infected cattle came, they carried and left in their track the seeds of contagion; on shipboard, in railway trucks, on the common roads, in stables, wherever they trod, or stood, or ate, or drank. Mr. Fleming describes numerous outbreaks at a time when so little was known of the disease in this country, that it was generally mistaken for something more familiar to the cattle doctors. Our own arrangements as regards cattle are favourable for their isolation, and consequently for their safety against contagion, our markets and fairs being the only exception. But we are not prepared for the treatment of a pestilence when it has actually come. Mr. Fleming quotes numerous British medical reports, and they are interesting, but they do not show the same amount of professional knowledge as the Continental reports quoted, and when our Government appointed an eminent man to investigate and report on the new disease, he betrayed, in Mr. Fleming's opinion, a great ignorance of comparative pathology. Whether the disease was really contagious was for some time a burning question, indeed a political one, but our author adduces a great array of facts that seem to leave no doubt on the point. Bovine Pleuro-pneumonia and other diseases of the lungs are common enough, but an examination of the lungs after death establishes a perceptible difference between the contagious and non-contagious disease. Like other pests, this seems to run its course and wear itself out. It destroys that which it feeds upon; but only to leave the coast clear for some new visitation.

As we have explained above, we have only given the history of the contagious Pleuro-pneumonia as one example out of many. There is not a single creature that enters into our domestic economy, our parlours, our stables, our gardens, our amusements, or our sports; hardly a creature coming at all under our observation, without its hosts of plagues, and its full share of special or common troubles. Mr. Fleming includes all animated nature under his purview, and even if he shows that the task is ever gaining upon us, and man's charity to the brute will never have need to fail, at all events he extends the range of human sympathies, and shows that in some important respects man, beast, bird, fish, and creeping thing, and even the plant in forest, field, or garden, are all akin.

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Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 5TH, 1883.

G. FLEMING, Esq., in the Chair.

Members present—Sir F. Fitzwygram; Professors Brown, Robertson, Walley, Williams; Messrs. Anderton, Bali, Blakeway, Cartledge, Cartwright, Collins, P.V.S.A.; Cox, Dray, Gowing, Greaves, Harpley, Perrins, Simcocks, Whittle, Woods, Wragg, Taylor.

The notice of meeting was read.

The minutes of the previous quarterly meeting were taken as read.

Letters were read from Messrs. Simonds and Reynolds, and a telegram from Mr. Simpson regretting their inability to attend.

Presentations to the library and museum were announced from Professor Brown, F. F. Collins, Esq., and the Editors of the veterinary and medical journals.

The thanks of the Council were accorded to those gentlemen.

Diplomas were granted to Messrs. J. Smith, P. Hampton, and G. S. Heatley, holders of the Highland and Agricultural Society's Certificate.

Letters were read from the recently appointed Examiners, acknowledging the honour of their election.

A letter from Dr. Dunsmure, resigning his office as Secretary to the Scottish Section of the Court of Examiners.

The PRESIDENT stated that on the receipt of Dr. Dunsmure's resignation he had selected Mr. Rutherford, of Edinburgh, to act as Secretary *pro tem.*

A vote of thanks was accorded to Dr. Dunsmure for his past services, and the Secretary was also directed to convey to him the condolence of the Council at his recent bereavement.

It was agreed that Mr. Rutherford's appointment be confirmed forthwith, and that his allowance as Secretary be the same as that of the retiring one.

The Examinations were fixed to commence in London on the 8th and in Scotland on the 15th inst.

A letter was read from Mr. Nicholson, M.P., on behalf of an "Existing Practitioner," who was refused Registration, his application not having been sent in until after the prescribed time.

The Secretary was instructed to inform Mr. Nicholson as to the facts of the case, and to inform him that the application was too late.

Letters with reference to Registration from Captain Russell and the Liverpool Society were directed to stand over until the Registration Committee had again met and sent in their Report.

The Report of the Finance Committee was read.

Mr. DRAY reported the amount of the Registration Fees received up to date, and pointed out that a considerable portion of that amount would have to be returned to applicants who were ineligible for Registration. The Committee approved the recommendation of the Secretary that the two accounts be merged into one, and that the expenses attendant on Registration be paid out of the Registration Fees.

On the motion of Professor WALLEY, seconded by Mr. WHITTLE, the Report was agreed to.

Mr. DRAY proposed and Mr. HARPLEY seconded, that cheques be drawn to meet the liabilities of the Royal College.

Registration Committee's Report.

The Report having been read,

The PRESIDENT, with regard to Query I., said a number of applications

were sent in after the 27th of August, and were rejected as being too late. The applicants then applied to the Vice-President of the Privy Council, and said they had been under a misapprehension as to the period when they should send in their applications. It was therefore suggested to the Committee that it would be advisable to extend the time, and it was accordingly extended until the meeting of the Committee, when it was decided that no further application should be received. With reference to the second query, the Council would no doubt acquiesce in a Supplemental List being sent out to the profession as complete as possible. Fees could not be returned to unsuccessful applicants until the whole matter was setfled. The form of Certificate to be sent to each practitioner had better be left for the present.

Parliamentary Committee's Report.

The Report of the Parliamentary Committee was read, and also the following proposed Supplemental Charter.

VICTORIA, by the Grace of God, of Great Britain and Ireland, Queen, Defender of the Faith. To all to whom these presents shall come, greeting :—

WHEREAS by Our Royal Charter or Letters Patent, granted on the 8th day of March, in the seventh year of our reign, and hereinafter referred to as the Charter of 1844, WE were graciously pleased to grant, ordain, and declare that THOMAS TURNER, WILLIAM JOSEPH GOODWIN, THOMAS MAYER, WILLIAM DICK, WILLIAM SEWELL, CHARLES SPOONER, and JAMES BEART SIMONDS, together with such other persons as then held certificates of qualification to practise as Veterinary Surgeons granted by the Royal Veterinary College of London, or by the Veterinary College of Edinburgh respectively, and such other persons as then were or might thereafter become Students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other Veterinary Colleges, corporate or unincorporate, as then were or thereafter should be established for the purposes of education in Veterinary Surgery, whether in London or elsewhere in the United Kingdom, and which We or our royal successors should under our sign manual authorise in that behalf, and should pass such examination as might be required by the orders, rules, and bye-laws which should be framed and confirmed pursuant to such Charter or Letters Patent, should be members of and form one body politic and corporate by the name of "The Royal College of Veterinary Surgeons" (hereinafter referred to as the "Royal College"), by which name they should have a perpetual succession, and a common seal, with such powers as in the same Charter mentioned :

AND WHEREAS by our Royal Charter or Letters Patent, granted respectively on the 23rd day of August, in the fortieth day of our reign, and on the 15th day of January, in the forty-second year of our reign (hereinafter respectively referred to as the Charter of 1876 and the Charter of 1879), We did make further provision for the government and regulation of the affairs of the said College :

AND WHEREAS by the Veterinary Surgeons Act, 1881, further provision was made for keeping a Register of Veterinary Surgeons directed to be kept by the Charter of 1876, and for preventing unqualified persons assuming title of Veterinary Surgeon or Veterinary Practitioner or other similar title, and for other purposes ; and the said Charters of 1844, 1876, and 1879, were confirmed, except so far as altered or inconsistent with the said Act, but not so as to prevent the making of any amendment thereof or addition thereto by any supplemental Charter not being inconsistent with the said Act :

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AND WHEREAS the Charter of 1844 authorises the Council of the said Royal College from time to time to make, alter, suspend, and repeal orders, rules, and bye-laws for (among other things) fixing and determining the times and places and manner of examining Students educated at the said Royal Veterinary College of London or the Veterinary College of Edinburgh or such other Veterinary Colleges as hereinbefore mentioned, who may be desirous of becoming members of the said Royal College, and for regulating the nature and extent of such examinations, and for the appointment of persons to examine and determine upon the fitness and qualifications of such Students, and for the admission or rejection of such Students as members of the said Royal College.

AND WHEREAS doubts have been raised as to the extent of the power of the Council to make orders, rules, or bye-laws, under the provisions of the Charter of 1844, and it appears to us expedient to amend these provisions:

AND WHEREAS by the Charter of 1844 the fee or fees chargeable for admission as a member of the said Royal College is or are limited to a maximum sum of Ten Guineas, and in view of the increased expense of holding examinations of candidates for membership consequent on the progress and extension of veterinary knowledge, it appears to us expedient to authorise an increase of the said maximum to a sum not exceeding Fifteen Guineas, and also to authorise the Council of the said Royal College to demand and receive a fee or fees in respect of registration of any person as a member of the said Royal College not exceeding Five Guineas:

AND WHEREAS it is expedient to make provision respecting the grant of the Diploma of Membership of the said Royal College to persons entitled under section 13 of the Veterinary Surgeons Act, 1881, to be registered as colonial or foreign practitioners:

AND WHEREAS the provisions of the Charter of 1844 respecting the date of retirement from office of the President, Vice-Presidents, and Secretary require amendment:

AND WHEREAS under the Charter of 1844 the President, Vice-Presidents, and Secretary of the said Royal College are appointed at a meeting of the Council held in every year before the expiration of one calendar month from the date of the annual general meeting, and by the Charter of 1876 the Council of the said Royal College are directed on the day of the annual general meeting of the members of the said Royal College in every year to appoint a fit and proper person as a Registrar, and it appears to us expedient that the Registrar be also appointed in every year at the same meeting as the President, Vice-Presidents, and Secretary:

NOW KNOW YE that We, of our especial grace and mere motion, at the humble petition of the said Royal College, have willed, ordained, constituted, declared, and granted, and by these presents for us, our heirs, and successors, do will, ordain, constitute, and declare, and unto the said College do grant, in manner following (that is to say):

1. It shall be lawful for the Council of the said Royal College (without prejudice to any power conferred by the Charters of 1844, 1876, and 1879) to make any orders, rules, or bye-laws for prescribing or regulating, in the case of Students of any of the Veterinary Colleges hereinbefore mentioned who may be desirous of becoming members of the said Royal College, all or any of the following matters (that is to say):

(1) The period of pupilage with a registered Veterinary Surgeon or Surgeons before admission as a member of the said Royal College.

(2) The minimum age of candidates for examination or admission as members of the said Royal College.

(3) It shall be lawful for the Council of the said Royal College from time to time to alter, suspend, or repeal any such orders, rules, or bye-laws, and to make new orders, rules, or bye-laws in their stead, as the Council may think proper and expedient, so that the same be not repugnant to these presents or to the laws of this our realm.

2. (1) Notwithstanding anything in the Charter of 1844, the Council of the said Royal College may demand and receive from any candidate at an examination of Students desirous of becoming members of the said Royal College, a fee or fees not exceeding in the whole the sum of Fifteen Guineas.

(2) The Council of the said Royal College may also demand and receive from any person on registration in the Register of Veterinary Surgeons a fee not exceeding the sum of Five Guineas.

3. It shall be lawful for the Council of the said Royal College from time to time to grant (either after or without previous examination) to any person entitled to be registered under section 13 of the Veterinary Surgeons Act, 1881, a Diploma of Membership.

4. Notwithstanding anything in the Charter of 1844, the President, Vice-Presidents, and Secretary shall continue in office till the Meeting of the Council at which their successors are appointed, and on the appointment of their respective successors they shall respectively retire from office.

5. Notwithstanding anything in the Charter of 1876, the Registrar of the said Royal College shall be appointed by the Council at the yearly meeting at which the President, Vice-Presidents, and Secretary are appointed, and shall hold office till the appointment of his successor.

AND WE DO HEREBY FURTHER DECLARE our will and pleasure to be that, except in the respects hereby altered, the said Royal College and the Council of the same shall have and continue to have all such and the same jurisdiction, powers, and authorities for the making, ordaining, confirming, annulling, or revoking orders, rules, and bye-laws, and transacting and ordaining all other matters and things whatsoever for the regulation, government, and advantage of the said Royal College, as the said Royal College and the Council thereof respectively had under the Charters of 1844, 1876, and 1879, or any of them, or in any other lawful manner.

AND WE DO HEREBY for us, our heirs and successors, further grant unto the said Royal College that these our Letters Patent on the enrolment or exemplification thereof shall be in and by all things good, firm, valid, sufficient, and effectual in the law according to the true intent and meaning thereof, notwithstanding the not fully or duly reciting the said Charters, or any other omission, imperfection, defect, matter, cause, or thing whatsoever, the same or any rule or law to the contrary thereof in anywise notwithstanding.

IN WITNESS whereof WE have caused these our Letters to be made Patent.

Witness ourselves at our Palace the
day of , in the forty- year of our reign.

BY HER MAJESTY'S COMMAND.

Professor WALLEY asked when it was intended to take action in the matter of obtaining a Supplemental Charter.

The PRESIDENT said the matter was in the hands of the Council.

Mr. TAYLOR thought some substantial reason should be given on the part of the President of the Parliamentary Committee for this application for a Supplementary Charter. The Council was legislating too much and administrating too little. If they had revised the bye-laws and made them sufficient it would have been better than applying for a Supplemental Charter.

Mr. GREAVES regretted to find himself at variance with Mr. Taylor.

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There was no more important question than that involved in the pupilage clause. They wished to be able to insist upon a candidate receiving practical instruction before applying for his diploma. At present they had not that power, and he was, therefore, entirely in favour of asking Parliament for it.

Mr. TAYLOR said the Council had the power already to make the practical examination as severe and as long as they chose, but they ought not to have power to dictate to the teaching schools that their pupils should go and do this, that, and the other.

Professor WILLIAMS thought that the carrying out of the pupilage clause was a matter of impossibility. Veterinary surgeons who had any practice at all would very often decline to have anything to do with pupils, and if they did take them they would never teach them anything. Then, with regard to the expense, did the profession as a whole offer parents and guardians a sufficient inducement to pay large fees? He believed that if the clause were insisted upon they would open the way for more quacks than ever to poach on their domain. The teaching schools were accused of selfish motives, but they had a far greater interest at stake than any member of that Council in the welfare of the profession, and, therefore, before legislating upon any question affecting their interests, their interests ought to be taken into careful consideration. He believed that the clause was directly opposed to the contract they had entered into with the Government, and he should therefore oppose it as far as he possibly could.

Professor WALLEY said it seemed to be forgotten by those who argued in favour of this clause that they had now a curriculum extending in any case over two and a half years, and that in some instances men were at the Colleges upwards of four years. Was the profession worth this, especially in such a country as Scotland, where men had often to work hard to support themselves at the colleges, and were as good men, nevertheless, as any in the profession? He should oppose the clause as unnecessary, considering the extended curriculum and the power already possessed by the Examiners.

Professor ROBERTSON said he had always opposed placing any weight upon the shoulders of their students that they were not able to bear, and this was the heaviest of them all. It would make the profession so expensive that men could not afford to enter it.

The PRESIDENT said the members of the Committee present at the modification of the present draft were entirely in favour of this clause. He did not think it contained anything which any principal or teacher in a school should object to. It must be for the interest of the schools, as of the entire body of the profession, that the graduates should be able to handle animals and go about them as practical men. Facilities for acquiring this knowledge were not given by the schools, and it was perfectly certain that young men who left College without having been with a veterinary surgeon before receiving their diploma were not fitted to practise in a country district. The pupil who went to a man with a mixed practice would, if fairly dealt with, be far more competent to practise his profession, especially at the commencement of his career, than if he had simply remained at College. The Council represented the profession, and it was for them to say whether this pupilage clause should be insisted upon.

Professor BROWN said there could not be any doubt as to the enormous advantage of practical experience to pupils before commencing anything like public practice. The question to decide was as to the manner in which their knowledge should be obtained. In order to test the feeling of the Council, he would propose that the Charter be applied for as it stood.

Mr. WOODS seconded the motion.

Mr. TAYLOR proposed as an amendment that the Charter be not applied for for the next twelve months.

Professor WALLEY seconded the amendment.

The amendment was put to the Council and declared to be lost.

The motion that the Supplemental Charter as a whole be applied for was put and carried.

Examination Committee's Report.

The report of the Examination Committee was read as follows :—

At the several meetings of this Committee, the following scheme was devised and subsequently submitted to the Council :—

1. That on and after January 1st, 1884, Students who enter the Veterinary Schools shall at their First Examination by the Royal College of Veterinary Surgeons undergo an Examination in the under-mentioned subjects—Part I. and Part II.—or produce a Certificate of having passed an Examination by some recognised educational body, for the following :—

(I.) For Matriculation, or any higher Examination for Degrees, or one of the "Local Examinations" held by a University in the United Kingdom, or by a Colonial or Foreign University recognised by the Council of this College.

(II.) For the Certificates of the First, Second, or Third Class—provided such Certificate contains the obligatory subjects—held by the College of Preceptors.

(III.) An Examination recognised by the General Medical Council as exempting Candidates from the Preliminary Literary Examinations of the various Medical Corporations; or a Certificate of Examination for Degrees in Law; or the Primary Certificate of the Pharmaceutical Society and College of Dentistry.

2. That Students who do not produce one or other of the foregoing Certificates shall be examined by the Board of Examiners of the College of Preceptors, under the direction and supervision of this College. The nature and extent of this Examination shall be fixed by the Council from time to time, and will be of two grades—(I.) That which will qualify only for the *Membership*, and that which will entitle the Candidate to compete for the *Fellowship* Degree. The Examination in both grades shall consist of two parts—one *obligatory*, and the other *voluntary*.

The following are the subjects of this Examination proposed for the year 1884 :—

PART I.

Obligatory Subjects.

1. Reading aloud.
2. Writing from dictation.
3. English Grammar, with Parsing and Composition.
4. Arithmetic—the Simple and Compound Rules, with Vulgar and Decimal Fractions.
5. Elementary English History and Geography.
6. Rudimentary Latin, French, or German.

The maximum number of marks for each subject is 100, and the minimum for passing 30.

PART II.

Voluntary Subjects.

1. English Literature and Composition.
2. History, Ancient and Modern.
3. Euclid.
4. Algebra.
5. Natural History.

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The maximum number of marks for each subject is 100, and the minimum for passing 50.

3. That Candidates for *Membership* shall be required to pass at one and the same Examination the whole of the subjects of Part I., and failure in any of the subjects will necessitate a Re-examination in these subjects.

4. That Candidates for the *Fellowship* shall, in addition to the subjects of Part I., be required to pass in *three* of the subjects of Part II. at their option.

N.B.—It is to be understood that the above or Certificates of Examinations are not intended to supersede or interfere with the Matriculation Examination of the Schools.

EXAMINATIONS.

The Committee appointed to report upon the Professional Examinations has recommended that there be only two Examinations held during the year, *i.e.*, April and July, and that Students for the Final Examination be all examined in the Practical before the Oral portion. Each Student is to be examined by each of the four Examiners at the Practical Examination for not less than a quarter of an hour. These alterations to come into operation after January, 1884.

The PRESIDENT said a discussion took place, at the last meeting of the Council, on the Report, as to the Education Scheme. He had since been informed, by several members, that they were entirely misled by the heading on the Report, which had reference to a Matriculation Scheme, and that on that heading they argued against it, thinking that it interfered with the entrance of students to the Schools; and the decision of the Council was "that it lie on the table." Seeing that misapprehension had arisen in that way, and finding that the decision of the Council was entirely opposed to the desire of the Committee, he had the Report amended and circulated. He had now, under these circumstances, taken the liberty of bringing it forward for discussion in the form in which it was intended to have been laid before them by the Examination Committee. There was no intention whatever of preventing students from entering the schools; the desire of the profession was that the holders of the diploma should be men possessing a certain amount of general education. He admitted that the Council had no power to enforce matriculation. They were only an examining body, and all they sought was to have power, before examining the students as to their professional education, to examine them in general knowledge. If, however, gentlemen who came up for examination would bring a certificate that they had passed a certain standard of education of some recognised Educational Body, that would be received as satisfactory. This would in no way interfere with the schools, and he thought it would be casting a reflection upon the Committee if this subject were not discussed and brought to a conclusion.

Prof. WALLEY said they all intended that the students should be properly educated; but what they aimed at was simply this—That there should be an uniform scheme of Education and Matriculation Examination, and he did not himself see what they were going to gain by adopting the Report. If, however, the Report were adopted, he thought they should recognise the Preliminary Examination of Law, of the Pharmaceutical Society and of the Dentists, and he would propose that those certificates should be added to the Report.

Professor ROBERTSON suggested that instead of the words "On and after the first of July, a student at his first examination shall present," they should insert the words "All students who enter the schools on or after the first of Jan, 1884." That would exempt those at present in the schools, and would let fresh students know that they were entering on these new conditions. With respect to No. 2, he should ask to insert, "provided such certificates take up or include all of the obligatory subjects."

Professor WALLEY moved that the clause as to examinations be altered so as to read, "that in the C examination the oral shall precede the practical part, and that any student failing in the former shall not be allowed to present himself for the latter; but if he succeed in the oral and fail in the practical, he shall not again be examined in the subjects comprised in the oral examination." He said the matter had been discussed thoroughly on previous occasions. The great alteration was that if a man passed his oral examination he might go away to get his practical knowledge where he liked. The schools did not want the men on their hands for practical work at all; they wanted them to go to practitioners, and when once they had passed the oral it was too bad to ask men to go on studying the oral when they were only deficient practically.

The PRESIDENT said so long as the student was under tuition, there ought to be some guarantee that the instruction was properly carried out. If the motion was adopted it would be found that the schools were throwing off the responsibility of practical teaching, and by so doing they were bringing forward one of the strongest arguments possible in favour of a period of pupilage.

Sir FREDERICK FITZWYGRAM said it was admitted that the schools could not teach practice, and therefore he could see no object in remanding a student back to a school to obtain his practical knowledge. It was very much better that he should first of all acquire his theoretical knowledge, and if necessary he should be called upon to pass a practical examination subsequently.

Mr. CARTLEDGE thought that the student, when going up for his practical examination, should give a certificate from a practical man to the effect that he had been with him, and had seen practice.

Professor WILLIAMS supported the motion, believing it to be very unjust to make a man come up again to an examination which he had already passed. He was quite willing to second Professor Walley's motion.

Professor WALLEY said he would add to his motion the amendment proposed by Mr. Cartledge—"That the student should present a certificate from the school or practitioner with whom he had been working."

The amendment was put to the Council and lost, eight voting for it and nine against.

The PRESIDENT said the Committee proposed that there should be only two examinations in the year instead of three.

Professor WALLEY proposed that in the first and second examinations there should be three examinations in the year, and in the final, two.

This motion was not seconded.

The PRESIDENT said with regard to the time occupied in the practical examination, it was laid down that each student was to be examined by each of the four Examiners for a quarter of an hour.

Mr. TAYLOR moved, "That it be not less than a quarter of an hour," leaving it to the option of the Examiners.

Mr. GREAVES seconded the motion.

Professor WILLIAMS proposed that the words stand—"at the option of the Examiners," without the "quarter of an hour."

Professor WALLEY seconded the amendment.

The amendment was put to the Council and lost.

The motion moved by Mr. Taylor was carried.

On the motion of Mr. TAYLOR, seconded by Mr. DRAY, the Report of the Examination Committee was then agreed to.

Professor WALLEY moved, "That Bye-law 34 be rescinded, or its provisions be more strictly enforced." The bye-law he said, provided that if a student was rejected at any one of the examinations he must go back to the College at which he had been studying for a certain period before again pre-

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senting himself for examination. He mentioned two instances in which the bye-law had been broken—students of the Edinburgh Veterinary College, who had been rejected at their first examinations having gone elsewhere, in one case to the New Veterinary College, and in the other to Glasgow, and then been allowed to return and present themselves for their examination. What he asked was, either that the rule should be rescinded, or that it should be properly carried out.

The PRESIDENT said there was no doubt that all their bye-laws should be carried out, but this could not be done unless those who were chiefly concerned informed the Secretary when any infringement had taken place.

Professor WILLIAMS said he was not aware that the bye-law had ever been infringed by his college in any shape or form.

The subject then dropped, the understanding being that the bye-law would be enforced.

Professor WALLEY then moved, "That the latter part of Bye-law 46 (now 47) read thus: 'A student holding a foreign or colonial veterinary diploma from any veterinary examining body recognised by the Council of the Royal College of Veterinary Surgeons, shall be exempt from attendance on the course of lectures for the two first years, and from the examinations at the end of those years respectively.'"

Professor WILLIAMS seconded, and the President supported the motion, which was agreed to.

Professor WALLEY then suggested alterations in the system of marking adopted in the examinations for the diploma. At present numbers were used. The student must obtain a minimum number in each subject, and also in the aggregate of subjects. That system was unfair to the student, for if a man passed in all the subjects, why should they require an aggregate minimum? He thought it would be better to use such terms as "Good," "Sufficient," "Indifferent," or "Bad." He would propose that those words should be substituted henceforth, instead of the system of figures.

Mr. HARPLEY entirely agreed as to the unfairness of having aggregate numbers. Supposing a person were examined in four subjects, and obtained the minimum number (25) in each, why should he be required to obtain an aggregate number of 105 to entitle him to pass?

The PRESIDENT said the minimum number had always been regarded as equal to "indifferent," and a student with two "indifferents" had been rejected.

The motion was seconded by Mr. CARTWRIGHT, and agreed to.

Professor WALLEY then moved that the diploma should be printed on vellum.

The Secretary was directed to inquire as to the probable cost of this.

Messrs. Broad and Woodger were elected auditors.

The SECRETARY read the obituary list.

Messrs. Duguid, Mayer, Edgar, Barnes, Drewe, and Gresswell were proposed as Examiners for the Royal Agricultural Society's prizes.

A ballot being taken, Messrs. Edgar, Barnes, and Duguid were declared to be elected to this office.

SPECIAL MEETING.

The PRESIDENT said it was well known to the majority of practitioners in London, that a member of the profession had for a number of years been bringing it into disrepute by defrauding people of money. Recently, this person and a number of others were apprehended for cheating people in the purchase of horses. The trial came on and ended in the defendants, who were horse-copers, except the member in question, confessing that they had been guilty of conspiracy, and they were let go with the intimation that

they were to come up for judgment when called upon. He therefore proposed in the terms of the Act of Parliament, "That a committee be appointed to inquire into the case alluded to, to take evidence, and then to report thereon to the Council."

Mr. DRAY seconded the motion, which was agreed to.

Messrs. Wragg, Robinson, and Cox were appointed to serve on this Committee.

The proceedings closed with a vote of thanks to the President for his able conduct in the chair.

IRISH CENTRAL VETERINARY MEDICAL SOCIETY.

THE annual meeting of this society was held on 9th January in the Theatre of the Royal Dublin Society. The following gentlemen were present, in addition to a good attendance of ordinary members and some visitors:

Mr. T. D. Lambert, honorary associate and out-going president; Mr. L. Hunter, Dublin; Mr. W. Pallin (late 20th Hussars); and Inspecting Veterinary Surgeon Lambert, of the Army Veterinary Department, vice-presidents; Mr. John Malcolm, of Enniscorthy, the president-elect for 1883; and the hon. secretary, Mr. Sperring, Government Veterinary Inspector, Dublin. The ordinary members also present were:—Messrs. Joseph Lawlor, Collins, Dublin; Freeman, Kingstown; Hedley, Miller, Government Veterinary Department; Dr. Donnelly, Dublin; Messrs. McKenny, Dublin; Woodroofe, A.V.D., and O'Donel, Government Veterinary Department.

Letters of apology were received from Messrs. Ashe, Peard, Adamson, Simcocks, Prior, Preston, Newsom, and several other members. A telegram was also received from Mr. T. H. Simcocks, Drogheda, to the same effect.

The minutes of the previous meeting being read (in which it was mentioned that Mr. T. D. Lambert, the out-going president, had been elected an honorary associate of the society, in recognition of the fact that he had been the first to occupy its chair, they were signed, and the Secretary presented the report for the past year, by which it appeared that the society is in a most healthy condition, both as to its funds and its future prospects.

On the motion of Mr. PALLIN, seconded by Mr. T. D. LAMBERT, the report was unanimously adopted.

The SECRETARY then gave a short account of the manner in which he had obtained the grant of the use of the Royal Dublin Society's Lecture Theatre for the purpose of the meetings of the "Irish Central," and gratefully acknowledged the kindly manner in which Mr. R. J. Moss, F.C.S., Registrar, and Mr. David Rogers, superintendent of the Royal Dublin Society, had assisted him in the attainment of this object, and congratulated the Veterinary Society on having obtained such substantial recognition at the hands of the Council of the Royal Dublin Society.

Mr. H. J. Kelly, Government Veterinary Inspector, Ballina, was then balloted for, and unanimously elected a member of the society. Mr. McKenny, of Dublin, was proposed as a member by Mr. MALCOLM, seconded by Mr. FREEMAN; and Mr. O'Donel was proposed as a member by Mr. T. D. LAMBERT, and seconded by Mr. SPERRING.

Mr. HEDLEY raised the question of the proposed registration of existing practitioners under the Veterinary Surgeons Act, 1881, by the R.C.V.S., and argued that although the Council was only carrying out the system which was adopted under the old Medical Act, he moved that the society should form a committee for the purpose of strenuously opposing all those persons who were not clearly entitled to it, and take every legal proceeding necessary in that behalf. The Registration Committee had recently imposed a condition on those who wished to protest against these people being regis-

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tered, and that was one which was calculated to interfere with the free action of members in the matter, viz., the obligation of an affidavit in support of a protest. This he considered to be unfair to the profession.

The SECRETARY said that he felt that an emphatic protest ought to be lodged by this society against this new regulation of the Registration Committee. There was no question of a doubt that the Committee and officials had before them a long and arduous task, but if these affidavits were largely sworn by the members, that some of them would soon find themselves involved in legal proceedings with the men they were opposing. He considered that a protest made *bonâ fide* by a member of the profession, and stating good and valid reasons of objection, should be sufficient for the purposes of the Registering Committee, and this would take the form of a privileged communication; whereas an affidavit could always be called for and produced as evidence by the other side in a court of law. He was speaking to a legal friend—a Dublin barrister—on the subject, a short time since, and that friend warned him against having anything to do with swearing an affidavit on such grounds, and if this advice was good for him (the Secretary) it should be good for all the members of the society. He considered not only that an emphatic protest should be lodged, but that the Committee be asked to withdraw this regulation, as being calculated to embarrass and hamper the profession in their action with regard to the admission of these pretenders to the Register.

Several other gentlemen followed on the same side, the only dissentient being Mr. G. B. Miller, who said that the registration of a quack would not make that man one particle more a veterinary surgeon than he was before, and that the registration was only intended to protect unqualified persons, who had been earning their bread for five years before the passing of the Act by horse and cow doctoring, from the penal clauses of the Act, and that he considered for the society to have anything to say to the matter would be *infra dig.* on its part, and would be giving the registered quacks a fictitious importance which they were not entitled to. (Hear, hear.) Mr. Miller's amendment, however, was overruled, and Mr. Hedley's motion adopted.

Mr. T. D. LAMBERT took the chair, and after the usual routine business of the society, including the Secretary's and Treasurer's report, had been got through, he inducted Mr. Malcolm into the chair, and congratulated him in felicitous terms on his assumption of office as president for the year.

Mr. MALCOLM then proceeded to deliver his inaugural address. He said: Gentlemen, the pride and gratification which I feel at being called upon to preside over the deliberations of this your learned society are, I assure you, considerably qualified by a sense of the responsibility attaching to the position, and a distrust of my capability of filling it with the credit it deserves. This sense of my own shortcomings will, I trust, however, prove to be of advantage in one respect, and that is of stimulating my energies and zeal in your service, so that when the term of office for which you have so kindly elected me shall have expired I shall lay down my trust with the consciousness that I have done my best in your behalf. This day sees the anniversary of our existence as a society, and young as it is I think that its members can point with pardonable pride to its record of usefulness during the brief period of its existence. It has obtained a footing in spite of many difficulties and obstacles, not the least of which latter was the opposition which met the scheme at its foundation, when the idea was first brought before the profession in Ireland by our now Secretary and one or two hard-working members of our body. When active opposition was not met with, another formidable enemy to the scheme was found in the apathy with which, I am sorry to say, movements for the benefit of the profession are, alas! too often treated by its members. Others there were who, true

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"laudatores tempora acti," sang their praises of the old time, and cynically inquired why, "if a veterinary society could not, and did not, thrive in the good old times, what prospect was there of its doing so now?" That query is sufficiently answered by the present condition and prospects of the Irish Central Veterinary Medical Society on this our anniversary. We have a large number of subscribing members on our roll, in addition to two revered names, which, "pro honoris causa," in the interest of our profession, have been placed on our roll of honorary associates. Both of these gentlemen (I need not say that I refer to Professor Ferguson and Mr. George Fleming) have taken a warm interest in our society. And although they have not, from circumstances beyond control, been able to lend us active assistance hitherto, I have every reason to believe that we shall secure their active co-operation during the ensuing year. Of Professor Ferguson, the father and acknowledged head of the profession in Ireland, I may say one thing, and that is, that our society possesses his very strongest sympathies. Of Mr. Fleming, the bright particular star in the ranks of the English section of the profession, what can I say more than that this (as every other effort to advance the interests of our body does) commands his warmest and most cordial support. At the time this society was established the profession in Ireland was unrepresented at our professional parliament, or, in other words, no Irish veterinary surgeon held a seat at the Council of the R.C.V.S. I am happy to say, however, gentlemen, that that stigma on our body in Ireland has been removed by the election of my friend Mr. Thomas H. Simcocks to that proud position. The ban of disfranchisement has been removed from us, and the views and requirements of the Irish section find an able and persistent exponent in the worthy member of our society who represents us at that board. This election, I need not remind you, was due almost entirely to the effort of our society. I say that this alone would be a sufficient evidence of the usefulness of our society, even were there no other; but I may further remind you that a short time ago I had the honour, in conjunction with my friend Thomas Drummond Lambert, your worthy and esteemed ex-president, of being delegated on your behalf to attend the inaugural meeting of the "National Veterinary Society" in London, when, I am proud to say, my co-delegate was elected a vice-president of that distinguished body, and that under its rules your President and Secretary will always have voices at its council. In that we have accomplished a thorough representation of the Irish practitioners at the fountain-heads of veterinary institutions. What more may we not accomplish in time to come? There is another good which I believe has arisen out of our meetings, and that is that they have brought together a large number of the members who were seldom or ever in the habit of meeting. Little amenities have been exchanged, friendly greetings given, opposing views discussed and settled, and the pleasant friction which opportunities of frequently meeting give have rounded off the little asperities inseparable from the encounter of those who are strangers to each other. I have thus slightly sketched the bearings of our society from a politico-professional, a representative, and a social point of view, but I feel I cannot pass from the subject without bearing my tribute of praise and thanks to the founder and mainspring of the society, without whose indefatigable energy and perseverance we should neither have existed as a society nor established it, as has been done. You all know I allude to our Secretary. Gentlemen, may I suggest that there are some diseases which I would very much desire some gentlemen to read papers on this year. First, there is Pleuro-pneumonia. There is such a diversity of opinion on this disease that it would open out a large field for discussion. We know it is infectious; that the disease commences in the bronchi, the blood becomes poisoned by the germs, inflamma-

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tion takes place, which extends to the parenchymatous structure of the lungs or interlobular tissue. The pleuro pulmonalis and pleuro costalis are next involved; then in place of exuding a sufficient portion of serum to lubricate parts and allow the lungs to move at ease, they become dry, thence the friction sound, but soon effusion of a more serious nature takes place. Lymph is formed, and adhesions take place between the pulmonalis and pleuro costalis; consolidation, hepatization of a lung or a portion of a lung, in some cases both lungs. In the first step any veterinary surgeon may make a mistake—that is, before structural disorganisation takes place—but when it reaches the latter step no veterinary surgeon ought to make any error with regard to it. Another very good subject, in my humble opinion, would be the atmospherie influences in disease, in connection with infectious diseases, such as Pleuro-pneumonia and many others. You all know the composition of the atmosphere. It is a mechanical mixture composed of oxygen, nitrogen, carbonic acid, ozone, ammonia, and vapour of water. You may often have seen the sun shining through a window, and small particles floating in the air. Well, those particles might be the germs of disease which, under ordinary circumstances, you cannot detect. This subject, I believe, would also bring forth some very valuable information in connection with disease in general. Another very important one, and one that I thought of bringing forward myself, is the soundness and unsoundness of horses; for you are all aware what a diversity of opinion exists among veterinarians on this very important subject—a subject which, in my mind, has done more to lower the standard of our profession than anything I am aware of. However, I hope some one more able and competent than myself will undertake the task. Glancing at those professional subjects which have been brought before the meetings of the past year, we have heard some noteworthy papers from three of our members—"Melanosis," at the hands of Mr. Ross; "Castration," by Mr. T. H. Simcocks; and "Influenza," by Mr. John Freeman, have each been brought forward in a most able and instructive manner, and have elicited lively and profitable discussion. Our attendances have been good, and no scientific argument has been tainted with anything like heat or extravagance, but each and all have done the very best to secure perfect harmony and good tone at our meetings; and I am sure that this will continue to be our rule. The record of our past being briefly noticed, let us consider for a few moments two or three of the goals towards which our exertions should be directed for the future. Let each member, during the pursuit of his daily avocations, note and record, for the benefit of the society, every strange or uncommon case which comes under his notice, and take special care to bring them before the meeting following. Let us all cultivate a strict attention to professional etiquette. Let us never be guilty of any conduct towards a professional brother which we would not like to be shown towards ourselves. Let us cultivate a spirit of brotherly love and mutual respect, and show an example to the world of thorough professional union. One word, gentlemen, about our veterinary inspectors. You know the very important post veterinary inspectors fill. The very honour of all the profession is at stake if they make a mistake; for a mistake made by one member of our body makes an impression on the minds of a large portion of the community that we are all alike; but at the same time the well-thinking portion of the public look over these matters. The remuneration they receive, considering the hardships they have to undergo in all kinds of weather, is very small indeed; and I believe, if represented in a proper form to the Government, it would take their condition into consideration; and never was there such an opportunity offered before as there is now, when Earl Spencer —who was always a true friend to the profession—is at the head of Her Majesty's Government in Ireland. There is a subject to which I may briefly allude, and that is, the advantage to be derived from cultivating as much as

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possible the co-ordination of the medical profession. I say it with regret, but I say it advisedly, that I am convinced that our position as surgeons and animal physicians is, as far as status goes, largely discounted by the acts of many individual members of our profession. The popular idea of a veterinary surgeon is, I am pained to say, that we are a kind of superior farriers.

We all know, gentlemen, that our education and professional training is at least equal to that of the ordinary medical practitioner; yet, what are the relative social positions in, say, a small country town of the two men? I say that (leave, of course, the soul element out of the question) our mission of administering medical aid and relief to God's dumb creatures is fully equal to that of the human surgeon; yet the humiliating fact remains that the social position of the latter, be it a true or false one, is infinitely superior to the former. The human surgeon in his diagnosis has the advantage of two aids thereto—the subjective set of symptoms, which are appreciable by his patient, and the objective symptoms, which are appreciable by himself. *We* have not the former aid to *our* diagnosis; *we* cannot obtain from our patient an exact description of the seat of disease, by the account which the human subject can render of his sensation of particular localised pain. No, our diagnosis must be derived exclusively from the objective class of symptoms; and this, I argue, requires a much more exact knowledge of symptomatology on our part than is ever required from the ordinary medical man. Each profession may learn something from the other in a variety of ways by co-operation. Let us assert our position. Let us refuse to accept a lesser position than we as scientists and members of a learned profession are entitled to. Be assured, gentlemen, the world takes a man very largely at the value he places upon himself. Gentlemanly bearing and conversation, exact knowledge, not only of the practice but the theory of the art of which we are the exponents, combined with a demeanour which compels proper recognition and respect, go far to establish the position of a veterinary surgeon who exhibits them to be a scholar and a gentleman. Happily, of these we have many in our ranks; but how many are there also who discount this status by unworthy habits and pursuits? There are too many, alas! But let us come out from amongst them, and show them a better example. Now, gentlemen, the beginning of my task as your president is done. Let us all determine to work together for the common good. Let us eschew petty professional jealousies and crotchets at all times. May you all enjoy a prosperous and happy year, which, when it approaches its end, will still show "something attempted, something done."

At the termination of the address, which was greeted with enthusiastic applause, Mr. W. PALLIN rose, and, in a happy speech, congratulated Mr. Malcolm on his assumption of the presidential chair, and proposed a hearty vote of thanks to that gentleman for his very interesting and eloquent address. This was seconded by Mr. HUNTER, and the meeting was brought to a close by the announcement from the Secretary, that Inspecting Veterinary Surgeon Lambert will read a paper on the "Germ Theory" in connection with diseases of animals, at the next meeting of the Society.

J. J. SPERRING, F.R.C.V.S., *Hon. Sec.*

LINCOLNSHIRE VETERINARY MEDICAL SOCIETY.

AT a meeting of veterinary surgeons of Lincolnshire and neighbouring counties (Leicestershire, Northamptonshire, and Nottinghamshire), on the 5th of December last, it was unanimously determined to form a Veterinary Medical Society, to embrace the above-mentioned counties, to be called "The Lincolnshire Veterinary Medical Society." The inauguration of this Society

took place at the Albion Hotel, Lincoln, on Thursday, the 18th January, the following gentlemen signifying their desire to join, viz.: Capt. R. H. Russell, Grantham, President; Mr. H. Howre, Lincoln; Mr. Jas. Mackinder, Peterborough; Mr. W. H. Brooks, Fulbeck, Vice-Presidents; Mr. W. Stanley Carless, Lincoln, Treasurer and Secretary; Mr. W. A. Field, Brigg; Mr. F. A. Holmes, Hemswell; Mr. George Whitworth, Grantham; Mr. F. Spencer, Wragley; Mr. J. W. Gresswell, Peterborough; Mr. John Sant, Lincoln; Mr. J. Brown, Navenby; Mr. T. E. Smith, Market Rasen; Mr. Kirtlan Smith, Louth; Mr. R. T. Hardy, Sleaford; Mr. W. Thos. Gooseman, Barton-on-Humber; Mr. T. Runciman, Market Deeping; Mr. Henry Hicks, Netheringham; Mr. George Goodacre, Crowle; Mr. R. C. Thompson, Bassingham; Mr. J. Hoole, Sleaford. With such an array of prominent men in the profession, this Society promises to be a success, and, considering the important matters now on the *tapis* as regards veterinary science, we admit the necessity of veterinary surgeons banding themselves together, not only for the purpose of defending their own interests, but also to work for the general advancement.

SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

A QUARTERLY meeting of the above Society was held in the London Hotel, St. Andrew's Square, Edinburgh, on Wednesday, Nov. 15th. The President, C. Cunningham, Esq., M.R.C.V.S., in the chair.

Present:—Messrs. Pottie, Paisley; Mitchell, Glasgow; Robinson, Greenock; Clark, Cupar Angus; Thompson, Aspatria; Potts, Wigton; Young, East Calder; Aitken, Dalkeith; Fairbairn, and W. O. Williams, Edinburgh; Storrie, East Linton; Cameron, Berwick-on-Tweed; Rutherford and Reid, Leith; McLaren, Platt, Professors Walley, McFadyean and Lewis, C. Philips, Esq., 3rd Dragoon Guards, a few friends, the representatives of the press, and the Secretary.

The minutes of last meeting having been read and confirmed, the Secretary read some correspondence relative to the proposed British National Veterinary Congress, the Fleming Testimonial Fund, and the first annual meeting and dinner of the three Scottish Veterinary Medical Associations, which was arranged to be held in Glasgow, under the auspices of the West of Scotland Veterinary Medical Association, on Friday, Dec. 22nd, 1882.

The following gentlemen were nominated for membership: Mr. Hepburn, M.R.C.V.S., Coldstream; Mr. Johnstone, Peebles; Mr. McArthur, Hawick.

The following gentlemen were nominated as office-bearers for 1883: President, C. Philips, Esq., V.S., A.V.D., 3rd Dragoon Guards, Piershill: Vice-presidents, John Storrie, Esq., M.R.C.V.S., East Linton; Prof. Walley, Dick Veterinary College, Edinburgh; Prof. Lewis, New Veterinary College, Edinburgh: Secretary and Treasurer, R. Rutherford, M.R.C.V.S., Edinburgh.

Mr. PHILIPS read a short paper descriptive of a case of Traumatic Laminitis in a pony, induced by the injudicious application of the Charlier shoe. The rectangular groove made in the base of the wall for the reception of the shoe had been too deeply effected, and in addition to this, the shoes, in Mr. Philips' opinion, had been fitted to the groove while much too hot. All four feet were affected. The treatment was removal of shoes, fomentations, poultices, simple diet and aperients, with opium in largish doses.

Mr. THOMPSON, Aspatria, subsequently read the following very able and exhaustive paper on "The Application of Salt to Land as a Preventive of Blood and Parasitic Diseases." He said:—

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Mr. Chairman and Gentlemen,—For the last thirteen years I have been closely connected with the working of a Farmers' Supply Association, with a turn-over of from £16,000 to £20,000 per annum, so that I have had exceptionally rare opportunities offered to me for seeing and examining the properties of all kinds of artificial feeding stuffs, as well as the various kinds of natural and artificial manures. Besides this, being the chief agent for selecting samples and submitting them to different chemists for analysis, I have become fairly well acquainted with their chemical composition; and, as these articles have been principally used on the farms in the district over which my practice extends, ample scope has been offered for observing and noting the results of the feeding materials, and the application of the natural and chemical manures to the land, and their effects upon the animals depasturing or feeding thereon, as well as their effects upon the crops.

Before entering into the particulars more immediately within the scope of my paper I will, with your kind permission, briefly relate a few incidents connected with the over-dosing of cattle with decorticated cotton cakes. Probably owing to this article containing such a large percentage of albuminous or nitrogenous principles, I have found that it has a very injurious effect upon young animals under twelve months old. When given in quantities varying from ½ lb. to 1 lb. daily for a fortnight, it causes congestion of the lungs and heart. The first symptoms to be noticed are hurried respiration, with a dry tickling cough; hanging of the head; engorgment of the jugular vein, with watery effusion into the cellular tissue along the under jaw, the lower portions of the neck, and the brisket.

The following incident is instructive and worthy of mention: A large shed was divided into three compartments, and into each compartment six two-year-old heifers were put; the animals in the middle box having the privilege of eating at will out of the mangers on each side which formed a portion of the divisions, and by this circumstance they were enabled to consume a much larger quantity of cake than their share, or the amount intended for them. This went on for about three weeks, when one morning three of the animals in the middle box were found dead, and their three companions very ill. I was telegraphed for, but before my arrival the other three had expired, and the owner, Mr. G. T. Carr, of Silloth Farm, was very much alarmed. I at once proceeded to make *post-mortems* of the animals. On opening into the stomachs, I found them to contain a quantity of matter resembling yellow paint; but, strange to say, on laying open the chest the lower portion of the lungs presented the *red* and *white* marbled consolidated appearance of Pleuro-pneumonia, with watery effusion into the chest and adhesion of the pleuras. From the suddenness of the attack, and its rapidly fatal termination, considered in connection with the facilities for over-feeding resulting from the peculiar position of the mangers, I concluded that the cotton cake was the cause, and ordered the remaining twelve animals to be put on a fresh diet, viz., crushed oats, bran, and a little *salt*, with hay and straw, when no other case occurred. On *four* other separate occasions, and on different farms, I found the following mode of feeding produce *Splenic Apoplexy:* Hay and straw was cut or chaffed, put into a heap, well saturated with cold water, and mixed with a few finger-cut turnips and allowed to lie about twenty-four hours. Indian meal was next put into a large tub with cold water to steep about the same time. The animals were then fed as follows: A portion of the *fermented* hay and turnip was mixed with a little of the steeped Indian meal, to which was added a small quantity of cotton cake and locust-bean meal, and given to the animals night and morning. As already stated, *Splenic Apoplexy* was the result, and a number of animals died suddenly; and on two farms, swine, dogs, cats, and poultry that ate of the flesh and blood also succumbed. On changing the food to plain crushed oats

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and bran and a little *salt*, with straw, the progress of the disease was always arrested. The *post-mortems* showed the spleens extensively enlarged, the flesh soft and flabby, with a quantity of brown-coloured effusion in the abdominal cavity, intestines, and bladder.

But I will now refer to matters more immediately connected with my paper.

In the summer of 1862, my friend Mr. Wm. Norman, of Hall Bank, Aspatria, turned *twenty-six* fine promising heifers into some pasture-land, known as GILL GOODEN, which had for ages been notorious as a hot-bed for *Red Water* in cattle, of a very virulent nature. The land was, and is still undrained, on limestone formation, and the herbage is of a very "tart" or acid description (*Tormentil*). The animals had only been on the pasture about three weeks when, on visiting them one morning, the herdsman found one dead. Little notice was taken of this at the moment, but, in the course of the same day, another was observed to be ill, and it died before medical assistance could be procured. Next morning two more were found to be ailing, and before my arrival, death had put an end to their existence. As matters were now beginning to assume a very serious aspect it was evident something must be done, or the whole herd would perish. *Post-mortems* were made, when the spleens were all found to be very much enlarged, and easily broken down; one of them measured thirty inches in length, fourteen inches in breadth, and six inches in thickness, and was of a dark tarry consistency. A quantity of dirty-coloured watery effusion was found in the abdomen, bladder, and intestinal canal Subsequently two other of the heifers were attacked, and before medical aid could be obtained, both died; and a very remarkable fact was that all the animals that succumbed were ill from two to four hours only.

After making the *post-mortem* examinations and carefully noting the appearances, I pronounced the disease to be *Splenic Apoplexy*, and ordered the remainder of the herd to be removed at once to Mr. Norman's own farm, at Hall Bank, where every one of them received a dose of medicine, consisting of sulphate of magnesia and chloride of sodium, ʒvi each, and pulv. zingib ʒij, given in three pints of thin gruel.

Being a young practitioner at the time, I deemed this the best treatment, but since then experience has led me to modify my opinion, and I consider it was a mistake, as sixteen out of the nineteen took *Red Water*, though all of them recovered. *One*, however, about twelve hours after the medicine was administered, was attacked with *Splenic Apoplexy*. On being quickly summoned to the place, I found the animal standing in the middle of the farm-yard, its nose nearly touching the ground, its eyes red and suffused, breathing, hard and catching; frothing at the mouth; trembling violently, with muscular twitchings on various parts of the body; standing forward on the hind fetlocks, and pulse scarcely preceptible.

Not having had the opportunity of seeing any of the other cases before they died, all having expired before I reached them, I concluded from the symptoms that death was fast approaching.

My idea at the time was that if the cow would stand bleeding (although against all theory from the symptoms presented), it would, perhaps, check the progress of the disease. I decided promptly, and abstracted one quart of blood, and administered hydrosulphite of soda ʒiv., with some powdered aromatics. In a short time after the animal seemed to improve, but still continued standing where I first found her. I again decided to take another quart of blood, which was done, and from what was then taught, repeated bleedings tended to increase the fibrinization of the blood; repeated the hyposulphite, with ginger, gentian, etc., when the animal gradually improved, and before night, or within twelve hours after she commenced, was as *well* as

ever. She was then given bran and crushed oat diet, with a little salt. All the other animals which suffered from Red Water were given two ounces each of hyposulphite of soda night and morning, and did well.

Mr. Norman subsequently gave up this pasture, which was taken by another of my clients, Mr. Jonahn. Holliday, of Plumbland Mill. This gentleman lost four or five cattle every year for about six years, from Red Water. Mr. Holliday also had two mares affected with Red Water on the same land. These were the only cases of Red Water in horses which I ever knew or heard of. I may here state that these animals did not seem to be at all inconvenienced, feeding in their wonted way, with nothing unusual about them except the urine, which was of a dirty brown colour ; each received a dose of purgative medicine, and the diet was changed to bran with a little salt.

With a great deal of persuasion, I induced Mr. Holliday to apply common salt to the land. About thirteen years ago he applied six cwt. per acre, and repeated the dressing a few years afterwards, and since the first application of the salt there has never been a single case of Red Water on the pasture. In another part of my district, Red Water prevailed to a very great extent on low-lying, mossy ground, the herbage of which was of a tart or acid character. The losses on these particular pastures were really very alarming from this malady.

A great friend of mine, Mr. John Twentyman, now of Blumerhasset Farm, resided at Edderside, and a considerable portion of the land which he occupied was of this nature, and, as a consequence, he suffered great loss from Red Water. One day Mr. Twentyman and I were sitting behind a fence, watching the dying struggles of one of his cows, when turning to me he said, "Thompson, what is Red Water?" I replied, "It is a disease of the blood, and due to the want of saline matters in that fluid, whereby the corpuscles, through what is called the endosmotic current, burst, and, with the colouring matters of the blood, make their escape by the kidneys, which causes the dark colour of the urine ; hence the name." He said, "Can the disease not be prevented?" I told him that dressing the land with caustic lime, would, in all probability, be a preventive. He replied that *lime* would make the land grow nothing else but *thistles*. I then said, "A dressing of ground rock salt would be worth the trial ; as it was the agent most used in the treatment of the disease, perhaps a top dressing of five or six cwt. per acre would prevent it." When he at once replied, that it should be done. The land was accordingly dressed with salt every alternate year during Mr. Twentyman's tenancy ; and from the first application about fourteen years ago, till the present time, there has not been a single case of Red Water on the farm.

The lady to whom the estate belongs, now in her eighty-sixth year, has frequently told me, that she could remember her *grandfather* "curing Red Water with a pound of salt, mixed with a little oatmeal and water, put into a stocking and placed on the fire and turned, then crushed up with the rolling-pin, mixed with churned milk, and horned into the animal." After the successful applications of salt to the land by Mr. Twentyman, nearly the whole of the farmers residing in that quarter, who had been suffering losses from the same disease in their cattle, adopted the system, and since that time there has been, on an average, from two to three hundred tons of crushed rock salt per annum applied to the land in the district over which my practice extends, and during the whole of that time *I have not seen one single case of Red Water!*

Hoose in Young Calves.

A malady, caused by small thread worms, called strongles, infesting the bronchial tubes, was, and still is, very prevalent in some parts of Cumberland.

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On my first settling down at Aspatria, I found the treatment of such cases very unsatisfactory. Upon investigation, I also noticed that the young animals which suffered the most were generally kept indoors during the early summer months, and then turned out to graze on the fogs and old lays, at the latter end of the summer, and allowed to remain out over night, suffering most in *August* and *September*. The lands on which the malady principally prevailed having been dressed with *salt*, and the animals kept indoors at night, the result has been that, for the past few years, I have rarely seen a case, and when I have met with one, it invariably turned out that the calves *had been left out during the night*. In my own immediate district, I have only seen one attack, and that was on land where no salt had been used, and the young stock had not been housed at nights. This is always most prevalent after wet summers. From my brother practitioners I find that in other parts of the country, Hoose in young calves has been very rife during the past season.

Diarrhœa or Scour in Stirks.

This complaint was also very prevalent, and is still so at the present time in some parts of Cumberland. In the immediate locality of Aspatria it frequently swept away whole herds of young animals from one to two years old, and raged to such an alarming extent that I tried all kinds of treatment for its cure, but without success. One thing I however noticed, that wherever animals *had not been turned out* to grass at the latter part of summer the malady was unknown, while those which were turned into fogs or old laid pastures, more particularly where the soil was strong, low-lying, and wet, invariably took the disease.

Having been so successful in the application of salt in the cases of *Red Water*, etc., and, from the *post-mortems*, finding that this particular Scour in stirks was analogous to Rot in sheep, as I frequently found flukes in the biliary ducts of the liver, I recommended as a preventive a dressing of crushed rock-salt to the land, during the early spring months, and now I am pleased to say the complaint is scarcely ever seen in my district. My opinion is that the young animals get the germs of the malady during the autumn months, commencing first with a short tickling cough, which continues some time before the scouring sets in.

Rheumatism in Cattle.

This complaint was generally known in the district by the name of Cripples, and usually found on mossy and sour pastures. By dressing the land with salt, the affection has entirely left the locality.

Quarter-ill, Quarter-evil, Black-leg, etc.

This disease was very common, and for several years I had a good share of cases, the treatment of which was of no avail. But whether the application of salt to the land, or putting setons in the young animals, at the back end of the year, or the better mode of feeding, in the way of judicious use of corn and cake, with a little salt have been the preventives, I cannot say; but, at all events, I have only met with one case during the past six years, and this was a young bull which had been over-fed.

Rot in Sheep, "Liver-Fluke."

This fearful and destructive malady, which has for years been decimating our ovine flocks, more especially during the last three or four years, and from which, according to the testimony of Mr. Finlay Dun, it was estimated that in the year 1879, in England and Wales alone, no less than three millions

of sheep died, or were sacrificed through Rot. The losses in 1880 and 1881 were equally great; and from the excessive rain-fall, this year will also have its own tale. This, at a rough estimate, cannot have been less than about £5,000,000 per annum loss to the country, and is no doubt the great cause of the extraordinary prices sheep are bringing in the market at the present time.

I cannot boast of extensive experience in this department, and can only recall instances of a few cases, as my practice is not situated in a heavy breeding district. My friend Mr. Norman, when he took the High Close Farm, some twenty-two years ago, found that for a number of years previous to his tenancy, the former occupiers could not keep sheep on the farm on account of this complaint. The land is high-lying (being fully 500 feet above the level of the sea), on limestone formation and of strong texture, and owing to lime-kilns being situated on the farm the land had been frequently and most extensively dressed with lime, yet the disease still prevailed. Mr. Norman commenced to dress the land with salt, and having laid down 200 acres of this land for sheep-grazing purposes, he now not only breeds high-class sheep —Lincolns—upon it, but can keep them until they are so old that they have scarcely a tooth in their heads, and yet they are never affected with Fluke.

In August, 1880, Mr. Twentyman, the gentleman already alluded to, sent sixty-five sheep to graze on an outlying pasture, which he had taken for the season; they remained there till the middle of September, when they were brought to his own farm. A little before Christmas, they were observed to be doing very badly. On the 6th January, 1881, one was killed, and flukes were found in the liver. Mr. Twentyman was surprised at this, as the disease was unknown on his land. The remainder were put under treatment, and all kinds of remedies were tried, but to no purpose. The animals were then housed at nights, and a good supply of cake and corn and one teaspoonful of common salt were given to each sheep every morning, and half pint of lime-water every night; under this treatment fourteen died and fifty recovered. The last death was in May, 1881, and on opening the animal, the gall-bladder and intestines contained a large number of flukes, but very few were found in the biliary ducts of the liver. The fifty sheep that recovered might as well have died, as they failed to make any profitable improvement during the following summer's grazing.

I may mention a remarkable incident in connection with these sheep. Every morning, when they were being turned into the pasture, they rushed into a cart-shed, in which was stored a quantity of crushed salt, and licked the salt with the greatest relish, and it was with difficulty that they could be driven from the salt. With this salt Mr. Twentyman afterwards dressed the lands on which the sheep had been depasturing, as a means of destroying the ova, or host-bearer, of the future fluke. Since that time there has not been another case of Rot on the farm.

In another part of my district, a Mr. Carter, of Dearham, about seven miles west of Aspatria, had a number of sheep affected with this malady. When he tried the salt treatment he went about it in the following manner: he sunk a large tub level with the surface of the ground, into which he put a strong solution of salt and water for the sheep to drink at their leisure, when the animals were seen to go to the tub, and drink the salt and water so regularly that it had to be renewed every day, notwithstanding that there was a stream of clear water running through the field at the same time. This seems very remarkable in two points,—first, that it is a very rare occurrence to see sheep drink at all; and, secondly, it confirms their great liking for salt. However, the principal portion of Mr. Carter's flock recovered under this treatment. Mr. Carter further informs me that he has a quantity of lump rock-salt on various parts of the pasture, and wherever the salt has

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been lying fresh beds of clover have sprung up, and that no worm-casts are to be seen.

Louping-ill in Sheep.

I approach this subject with no little amount of diffidence, seeing that it has received so much attention from our most eminent and learned Professors; and I have very little to say on the matter, as there is still so much diversity of opinion upon it. I can only relate two facts in connection with it which have come under my notice, and there is an old saying, that one ounce of practical fact is worth a pound of theory. Mr. Norman, the same gentleman I have referred to before, has for some years occupied a farm in the county of Surrey, near Aldershot, the land being of a strong character. About three years ago he called to consult me in reference to the loss of a number of sheep on this farm. The symptoms were trembling, loss of locomotive power, jerking of the limbs, falling down; followed by diarrhœa, and terminating in death, in a period varying from six hours to five or six days.

From the description of the symptoms, I concluded that the disease was Louping-ill, and gave my opinion as such, and recommended the application of five or six cwt. of salt to the acre, as a preventive; and from his own practical acquaintance of the value, by using this article on his other farms, he at once decided to try it, and the effect was so satisfactory, that I am pleased to say, the disease has entirely disappeared, and he now uses about twenty tons every year on this farm.

Again, in the south of Cumberland, a place called Millom Parks has had an evil repute for generations for Red Water and Dysentery in cattle; and what is called by the natives "*Stomach Staggers*," *in sheep.* These maladies prevailed there to an alarming extent, as the average *annual* loss was computed as follows: From Stomach Staggers in sheep—which is Louping-ill under another name—from 100 to 150 died; and from fifteen to twenty cattle in Red Water; and in very hot summers, five to ten cows from Dysentery. The present tenant, Mr. Harker, consulted me on two occasions in 1880, as to the application of salt to the land as a preventive, and on my recommendation he applied 120 tons to 300 acres, or eight cwt. per acre; this was applied in January and March, 1881. He now writes me that in 1881 he had two cows in Red Water and six sheep in Louping-ill. This year—a very bad one for Red Water—he has had five cows affected, four of which died, *but not one single case of Louping-ill.* Three sheep had gone down from other causes, and he has at the present time 250 head of sheep on the Parks, all doing well. This speaks for itself, and needs, I think, no further comment.

I could enumerate numerous other successful cases, where the application of salt to the land has far exceeded the most sanguine expectations; but I think sufficient has been said in this respect.

Let us see, then, if we can arrive at any plausible reason, why it acts so beneficially? With the aid of that powerful instrument, the microscope, what startling discoveries have been brought to light, and what a vast field of research has been opened up! Our Continental friends have come boldly to the front, and their labours have been such that we are now enjoying the great fashionable period of the Germ Theory in medicine, as diseases and their treatment fall in for their share of periodical fashion.

The researches of Pasteur and others prove, to absolute demonstration, that the class of diseases alluded to in my paper are due to, and directly produced by, the action of minute organisms in the blood, and from extensive experiments they have so far become masters of their position, as to prepare from the blood of diseased animals attenuated soups or liquids, and, by the inoculation of healthy subjects with these preparations, the animals are pro-

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tected from the virulence of the maladies. This, gentlemen, is of the greatest importance. Old-fashioned and obsolete theories must now go to the winds, and a new method of combating disease reign in its stead. Our colleges will have to re-arrange their curriculum, and teachers turn their attention more to preventive measures than to physic—a more reasonable and scientific plan—and which, I am pleased to note, has already been adopted in this city, and successfully carried out by our worthy secretary, Mr. Rutherford, who, by his method of inoculation, has robbed Pleuro-Pneumonia of its sting.

The best explanation of the manner in which vaccination exerts its protective influence, so as to render the system unassailable to specific diseases, is that of my friend, Mr. A. S. Moffat, of Newcastle. In his admirable papers on "Fungi, and their Work in Nature," published in the *Newcastle Weekly Chronicle*, he explains the action of vaccine lymph on the animal system to be somewhat analogous to the fairy-ring fungi on old-laid grazing land. He says: "A spore of the fairy-ring fungus finding a resting-place on congenial soil, replete with the peculiar constituents necessary to its development and growth, exists only in such minute quantity in ordinary soil that it is unable to support a second crop; hence the fungus can only extend itself on fresh and unexhausted soil, in an outward direction, gradually increasing in diameter from a few inches to a radius of several feet. The soil of the interior of the circle, being exhausted by the crop it has already borne, remains bare, while the fungus flourishes on fresh pabulum at the periphery. I consider that the foregoing illustration precisely indicates the probable action of vaccine virus on the animal system, eliminating from the constitution some unknown, and difficult to replace, principle necessary to the development and existence of the specific diseases, or by leaving a scanty supply renders its powers for mischief comparatively feeble and innoxious."

We have authenticated cases, where it is induced under different conditions of management, breaking out at times when the animals are on certain grazing lands, and again when they are stall-fed. When cattle are attacked at pasture, I have found it on tart or sour undrained lands, and my opinion was, that the blood did not receive a sufficient quantity of saline matters necessary for its healthy composition, and the balance between its solid and fluid contents was lost, and its plasticity destroyed. Again, when animals are stall-fed on an excess of amylaceous and saccharine substances, whose elements are bordering on a state of change by steeping in water, conditions which are well known to favour fermentation: for instance, in the malting of barley, the starchy elements are changed into saccharine materials, which, under certain conditions, are readily converted into acetic acid by exposure to the air, so that when brewers' grains or cummings are steeped in water and left exposed to the air they undergo acid reaction. When animals receive, for a length of time, food of a fermentative character, whose action seems to be further increased by the addition of cotton cake, containing a quantity of nitrogen, the blood appears to undergo some peculiar change; thus showing that the quality and nature of the food will exert a great influence in inducing a certain state or condition of the fluids and solids more or less favourable to the development and propagation of these organisms, and that the more disposed the fluids may be to enter into a state of putrefactive fermentation from an exuberance of nitrogenous principles in them, the better fitted will they be to offer a congenial nidus to such organisms. It is strange, that, in this country, we rarely hear of the disease spreading farther than the pasture on which it originates, or beyond the walls of the farm-buildings where the cattle are stall-fed. And may it not be possible, that the immense quantities of manurial refuse from the wine-makers' establishments of the Continent may so furnish the herbage of their

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pastures with such an excess of azotized principles, as to induce a state of the fluids of the cattle depasturing on them peculiarly favourable to the development of the particular species of micro-fungus which cause Splenic Fever, Chicken Cholera, and "Charbon," or "Quarter-ill"? Besides the peculiarly suitable condition of the blood and fluids of the animal, for the reproduction and maintenance of these organisms, we must take into consideration the possibility—nay, more, the extreme likelihood of the refuse of the wine-vats, containing as it does, a considerable quantity of nitrogen, becoming when spread over the pastures, a prolific nursery for the breeding of the micromorbs of the diseases. If this be so, then we have in combination all the circumstances and conditions requisite for the ready and frequent recurrence of the maladies in question, in the reproduction of the organisms which cause them in the manure spread over the surface, and in the blood and fluids of the animals in a state ready for their reception and multiplication. I think this may reasonably account for the greater frequency of the diseases in question in the vine-growing countries on the Continent than in colder climates. However, it must be understood, that it merely offers this idea, and that it must be taken for what it is worth. At all events, my practice has always pointed to the food as a cause, both at pasture and in the byre, and from repeated satisfactory results, I have confidence in recommending the use of salt, given along with the food daily or as a dressing to the land. If the disease be due to improper food or the specific germs of organic life taken into the body, I feel certain that in a judicious use of the chloride with the food will prevent the organisms springing into active life, and by dressing the pastures at suitable times with the same article, any germs, ova, or larvæ, that may be lurking in the stems or blades of grass, whether brought to the surface by the earth-worm or otherwise, will be destroyed and the animals protected from these specific diseases. Referring to the "lung-strongle," it perhaps is not generally known that the parasite is "ovoviviparous," bringing forth the young alive after being hatched within the body. Mr. A. S. Moffat, a profound naturalist and great microscopist, says:—"While examining a female strongle taken from the lungs of a diseased sheep, under a single microscope, I was not a little surprised to see the posterior half of the body suddenly split open longitudinally, and about three dozen young—in every particular a precise *fac-simile* of the parent—roll out among the water on the slide in which it was immersed; they all seemed fully matured and ready for their peculiar career." This in my mind readily accounts for the large number of the parasites found so early on in the complaint, in the trachea and bronchial tubes; and as already stated, I find dressing the land with *salt* and housing the young animals at night the best preventive. Turning to "Louping-ill" in sheep, whether this complaint be due to ergotised grasses—a fungoid disease itself—or from small organisms carried by the tick, which it in turn may have contracted from some small germic body that might be concealed in the stems of the plants on the pasture, I cannot say; but the decided and extraordinary results of Mr. Norman's and Mr. Harker's experiments justify further trials of the salt-dressings, for not only will the ova, larvæ, and host-bearers of insect life be annihilated, but the diseased grasses will be destroyed, and fresh succulent herbage of a nutritive character spring forth instead. The same remarks may be made as to dressing the land for the destruction of the ova, pupæ, and the host-bearers of the liver-fluke, for, like my friend Mr. Moffat, I am inclined to think that the pupal stage of the fluke is passed under the external covering of the lower stems of the grasses, near the damp surface of a retentive soil, and carried with the food into the interior of the animal. "Parrot-mouthed," or "shuttle-gobbed" sheep seldom become affected, on account of the malformation of the lower jaw preventing them nipping the herbage so near the

surface. My reason for this view was brought about by watching the movements of a bird, one cold frosty day near Christmas, picking at a bare twig. On securing the twig, I found under the bark a large quantity of larvæ, and if under the bark of a tree is the winter quarters for some of the insect pests, why can't the skin of the stem of grasses act in the same capacity for others?

In conclusion, I think few will deny the valuable use of this natural and extensively diffused commodity, which is as beneficial to the healthy construction and maintenance of the highest forms of life, as it is destructive to the lower organisms. For countless ages the mountains and soils have been robbed of their essential fertilizing and health-giving properties by the rain, evaporated from the tropical seas, and wafted by the winds all over the lands, to find its way back by the rivers into the oceans from whence it came. But may I ask, who returns the solids? Let us, then, follow the dictates of Nature, and return to the lands at least a portion of the matters which have been carried away. And from practical tests, I know of nothing so cheap, so beneficial, and so satisfactory in its results, as chloride of sodium—common salt—and I recommend its application as follows :—The stubble lands should be well dressed before being turned over at the back end of the year, as a preventive of irregular and diseased growths of our cereal and root-crops, such as finger-and-toe and ambury in turnips, potato disease, etc. ; for, as a rule, the greatest portion of insect pests that affect these crops deposit their ova or eggs in the autumn, in the most suitable situations, as stubble roots, damp grasses, clover leafage, etc., close to the ground ; so that by dressing the land with rough crushed rock-salt before autumn ploughing, the ova of the future insects would be destroyed before they reached the larva or "grub" stage, which they do during the winter months, and cause the greatest amount of injury in this form, by eating into the roots of the different crops in spring. For grazing pastures and meadows, as a preventive of parasitic and blood affections in animals, autumn and spring applications will give the best results ; but I have found in a good spring dressing all that could be desired, destroying these little organisms during some of their transformations, and before they are brought into active life by the genial rays of the summer's sun. These systems, if properly carried out—which I have during the past few years, from practical tests, found to exceed my most sanguine expectations—would be much better, and equally as successful in destroying the germs of these specific diseases, and much more satisfactory than subjecting our valuable flocks and herds to poisonous inoculations. Nay, I would go further, in saying that the salt washed from the land by the rains into the rivers, would, I am inclined to think, have a tendency to prevent the fungoid disease which affects the skin of the lordly salmon. Another prolific nursery for insect life is the farm-yard manure heap, which should have a layer of salt spread over it whenever it is dressed up. (Applause).

Professor WALLEY said the Society were much indebted to Mr. Thompson for coming so far to give them such an interesting paper, but the assertions made were of such a sweeping character, and covered so much ground, that it was impossible to take them up at that time, and he suggested that they should defer the discussion of the paper till their next meeting, by which time they would have an opportunity of considering it after publication. He had always impressed upon those connected with the profession, and especially upon his students, the necessity of using large quantities of salt as preventive of the diseases to which Mr. Thompson alluded. He was travelling through the Midland Counties only the other day, when the country was very much flooded, and he told a farmer whom he met that if he threw a little salt on the land after the floods subsided, they might save their sheep.

Mr. POTTIE also thought Mr. Thompson's assertions a little too sweeping.

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He held that the Splenic Apoplexy met with in this country was different from that seen on the Continent, which was an infectious disease, and the blood of which was exceedingly poisonous. He had tested the matter by feeding all kinds of animals on the flesh of beasts suffering from this so-called Splenic Apoplexy, and it had even been eaten by human beings without any injurious result.

Professor LEWIS spoke generally in favour of the application of salt to land as a preventive of disease, but doubted if it had all the curative properties assigned it by Mr. Thompson, in dealing with the various diseases enumerated, many of which were of different natures.

Mr. THOMPSON in reply said all the diseases to which he had referred were of a parasitic nature, and he maintained that salt would destroy them.

It was then agreed to adjourn the discussion of the paper till next meeting, the hope being expressed that Mr. Thompson would be able to attend.

Interesting Cases.

Professor WALLEY submitted a specimen of tuberculous disease of the tongue of a two-year-old stirk sent him by Mr. Macgillivray, Banff. The professor said he thought it was the duty of the profession to memorialize the Privy Council to include that disease in the schedule of the contagious diseases. He also mentioned that a cow killed (from Morningside) a week ago, and which had been used for milking purposes, was found to have Tuberculosis of the lungs.

Professor WALLEY also exhibited an interesting specimen of nutmeg liver, which reached the enormous weight of sixty-three pounds; and he stated that the animal was subject to extensive ulceration of the stomach and intestines.

Mr. W. O. WILLIAMS, New Veterinary College, submitted the intestines of a kitten, through a length of which was a string which the animal had swallowed. Previous to its being killed Mr. Williams had extracted a needle and thread from the stomach, which it had also swallowed.

Mr. CAMERON, Berwick-on-Tweed, showed a ruptured stomach with a diseased liver, of a four-year-old filly. The stomach had the additional peculiarity, viz., extensive peeling of the inner surface as if from the action of an erosive. Mr. Cameron could not account for the condition seen; nothing had been given to produce the condition, and to make the case more difficult, another young horse was at the time still suffering, and not expected to recover, the symptoms presented being identical with those shown by the filly.

On the motion of the SECRETARY, a vote of thanks was given to Messrs. Philips and Thompson for their papers, and with a similar compliment to the chairman, the meeting separated. R. RUTHERFORD, *Secretary.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held in the County Hotel, Newcastle-upon-Tyne, on the 24th November, 1882,

The President, Mr. H. Hunter, in the chair.

Present:—Messrs. M. Hedley and T. Biggs, Darlington; J. B. Nisbet, Fence Houses; W. Awde, Stockton-on-Tees; J. Fairbairn, Alnwick; W. J. Mulvey, Bishop Auckland; J. E. Peele and G. Farrow, jun., Durham; G. M. Mitchell and D. Dudgeon, Sunderland; W. W. Smart, Gateshead; C. Stephenson; J. H. Wilson, W. G. R. A. Cox, A. Hunter, and the Secretary, Newcastle-on-Tyne.

Visitor:—Mr. Stevenson, Sunderland.

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Letters of apology were read for non-attendance from Professor Walley, Messrs. T. Greaves, T. Foreman, and D. M'Gregor.

The minutes of the previous meeting were then read and confirmed.

Mr. M. HEDLEY nominated Mr. George Edward Marsh, of Richmond, as a member of this Association.

Mr. H. HUNTER nominated Mr. J. Fairbairn, of Alnwick, and Mr. Cox, of Newcastle, as members of this Association.

The SECRETARY, in introducing for consideration the list of persons applying for registration under the Veterinary Surgeons Act, 1881, said he had sent circulars of the meeting to all the members of the veterinary profession residing within the district of the North of England Veterinary Medical Association not members of this Association. In doing so he had sent notice to a gentleman who he always thought was a qualified practitioner. In reply he had received the following letter :—

"Veterinary Surgery, Glanton, near Alnwick,
"*Nov. 22nd*, 1882.

"SIR,—I dare say you qualified and duly registered veterinary surgeons will feel much degradation at being obliged to herd with three out of the four applicants for registration belonging to Northumberland, who are, I dare say, men of good moral character (which appears to be the qualification required in your *botched* Act of Parliament) ; but a broken farmer, a blacksmith, and a schoolmaster seem rather strange vocations to claim registration. Those men I have indicated have never been in any way trained for veterinary surgeons, neither practically nor theoretically. Of course Mr. Kitchen, the fourth man I allude to, is a trained man and an excellent practitioner. I am glad my name is not to appear amongst them ; I am content to remain a non-registered veterinary surgeon. Won't N.R.V.S.* look rather nice upon my plate?

"Will you kindly let me know if the mare is still living that Fleming said had Cancer, as I wish to write again to the VETERINARY JOURNAL concerning the case? May I use your name as meeting me at the case?

"Yours truly,

"G. Elphick, Esq., Secretary N.E.V.M.A., "WM. MARSHALL.
"Newcastle-on-Tyne."

He (Secretary) was exceedingly sorry to hurt any one's feelings, especially Mr. Marshall's, and would take care that the accident did not occur again.

Mr. D. DUDGEON said, in considering the list of applicants, he thought no man had a right to apply for registration who had not practised veterinary medicine and surgery continuously, and had not obtained his living by so practising. He had consulted his solicitor, who confirmed his opinion that any one applying for registration must have practised continuously for the past five years, and obtained his living by so doing.

Mr. J. E. PEELE endorsed all that Mr. Dudgeon had said, and thought no man should be allowed to register who had not practised continuously as veterinary surgeon, and that the Privy Council ought to know what sort of men were applying for registration. The following circular was a good illustration of the kind of men that were applying :—

NOTICE OF REMOVAL.

RICHARD HARVEY,
Veterinary Surgeon,
FROM
BURBANK STREET TO 32, WHITBY STREET, WEST HARTLEPOOL.
Over thirty years' extensive experience in the profession, principally in Macclesfield

* Non-Registered Veterinary Surgeon.

and Plymouth, where he was appointed Government inspector for the Plumpton and Ermington division during the Rinderpest, and presented with a silver cup, in 1866, by the dairymen for his successful treatment of their cows.

HORSES CAREFULLY EXAMINED AS TO SOUNDNESS.

Lameness in horses treated without the permanent blemish and torture of the firing iron, which is frequently resorted to by unprincipled practitioners simply for the purpose of making a long bill.

R. H. will take this opportunity of thanking those owners of horses and cattle who have supported him during his residence here. He feels the more grateful, as he came into the neighbourhood a perfect stranger, and had to contend with an established opposition; beyond this an Irishman took the cowardly advantage of being surrounded by satellites to insult him in a most uncalled-for manner. This Irishman is the especial favourite of a small issue of backbiting, scurrilous rubbish, and he was taunted with the contemptible hypercriticism of these illiterate imbeciles.

(Laughter and applause.)

After a lengthy discussion, in which most of the members present took part, it was proposed by Mr. D. DUDGEON, and seconded by Mr. A. HUNTER, that the further consideration of the subject be adjourned for a fortnight. Carried.

Mr. M. HEDLEY proposed, and Mr. BRIGGS seconded, that Mr. Marshall's letter and Mr. Harvey's circular be entered upon the minutes and sent to the veterinary journals for publication. Carried unanimously.

Proposed by Mr. J. E. PEELE, and seconded by Mr. HEDLEY, that Mr. Smart's paper on "Pleuro-pneumonia contagiosa" be adjourned to the next quarterly meeting. Carried.

Mr. G. M. MITCHELL then related a very interesting case of dislocation of the hip-joint in a cart horse. He believed it was a very unfrequent occurrence. The subject was an aged draught gelding used for trolley work. When the accident happened the horse was backing into a warehouse, when the calking of the shoe caught the curb and he fell. He fell first on to his hind quarter, and then on to his side. He lay perfectly quiet, but when standing suffered pain and was unable to put the near hind foot to the ground. He was taken home and placed in slings. He (Mr. Mitchell) did not see the horse until three weeks after the accident. He found the limb much shorter and the quarter very much swollen. Could detect a slight grating sound, but could find nothing when examining per rectum, as the parts were very much swollen. Had great difficulty in extending the limb. He ordered the animal to be destroyed, and on making a *post-mortem* examination found the hip dislocated, with laceration of the tendons and ligaments of the joint, with extravasation of blood in the surrounding tissues. No bones fractured. The dislocation had been outwardly.

Mr. D. DUDGEON said he was called in some time ago to see a very valuable mare, which was very lame on the near hind leg and could make no use of it. He thought it was dislocation of the patella. During manipulation the mare became very restive, and fell over on to the lame side. She jumped up all right and continued to keep so.

Several of the members thought it must have been cramp. They had had similar cases, and the treatment generally consisted of the application of hot rugs and the administration of a dose of physic. Several members had seen cases of relaxation of the stifle joint in colts, and found the best treatment was to let them alone and give them time. In obstinate cases had found setons and blisters very beneficial.

With a vote of thanks to the chairman the meeting terminated.

The adjourned meeting to consider the list of applicants applying for registration under the Veterinary Surgeons Act, 1881, was held in the County Hotel, Newcastle-upon-Tyne, on Friday, the 8th December, 1882.

Present:—Mr. H. Hunter, President, in the chair. Messrs. J. E. Peele, H. G. Farrow, jun., Durham; Mr. C. Hunting, South Hetton; Messrs. D. Dudgeon, D. G. M. Mitchell, Sunderland; Mr. J. B. Nisbet, Fence Houses; Mr. T. Foreman, Leadgate; Mr. W. Temple, Chester-le-Street; Mr. Grieve, Blaydon; Messrs. W. W. Smart and W. S. Pringle, Gateshead; Messrs. C. Stephenson, W. G. R. A. Cox, W. Hunter, and the Secretary, Newcastle-upon-Tyne.

Letters of apology were read from Messrs. Awde and Mulvey regretting their inability to attend.

The further discussion of the list of applicants applying for registration under the Veterinary Surgeons Act was introduced by the President, and a very animated discussion ensued, when it was unanimously resolved to oppose all applicants who have not practised veterinary medicine and surgery continuously since August 27th, 1876, and that each individual member of the Association be requested to send in his objections why any of the applicants should not be registered, to the Secretary of the Royal College of Veterinary Surgeons, 10, Red Lion Square, London, W.C., on or before the 18th inst. GEORGE ELPHICK, *Secretary.*

MEDICAL SOCIETY OF LONDON.

BACILLI.—At the meeting of this Society on December 4th, 1882, Dr. Heneage Gibbes showed a large number of specimens of bacteria, including *Bacillus anthracis*, *Bacillus tuberculosis*, from cattle and from the human subject; the so-called "typhoid bacillus"; *Bacillus anthracis* after cultivation; putrefactive bacilli; bacilli from Septicæmia, Diphtheria, Sheep-pox, purples; bacilli from the Welbeck poisoning case; and the so-called infective micrococci from the spleen of a tuberculous patient. A great part of the evening was spent in the examination of these specimens. Dr. Gibbes drew attention to the two forms of tubercle met with in the human subject, as already defined by Klein: the reticular and non-reticular forms (specimens of bacilli in both were shown). In the former class of cases, bacilli were rarely found; in his own observations, in only one lung out of ten, and then in the smallest numbers, singly or in groups of three or four, in the meshes of the reticulum. In the non-reticular tubercles, on the contrary, bacilli were of almost invariable occurrence in large numbers, and were aggregated into masses, especially to be found in the midst of the caseous centre. He was inclined to think that the latter form indicated a more acute disease than the former. Bovine tubercle was always of the reticular form, with large and numerous giant-cells; the tubercles being aggregated in large masses, which are caseous in many places. In bovine reticulated tubercle, however, bacilli were abundant, but found, not as in the human subject, solely in the reticulum, nor, as in human non-reticular tubercles, in the midst of the caseous matter, but partly in the reticulum, partly around the edge of the caseous region, and partly in the interior of the amœboid and giant-cells. He was inclined to think that the bacillus would prove to be of a different kind to the human one. He had found the bacillus in the liver and spleen, not in the omentum.—Dr. C. Theodore Williams had found *Bacillus tuberculosis* by Dr. Gibbes's method in the sputa of nearly all cases of advanced Phthisis, but not in all. He thought the exceptions were cases in process of recovery.—Dr. Radcliffe Crocker and Dr. Heron remarked on the various processes for staining the tubercle-bacillus.—Mr. Jabez Hogg remarked on the clinical aspects of the investigation.—Dr. Green said that we had still to learn what were the conditions which enabled the bacillus to produce tubercular lesions.—Dr. Drysdale also made remarks on the question from the point of view of diagnosis.—Dr. Gibbes said he had not yet examined the blood in tubercle.

He pointed out that, in his method, a definite chemical compound was formed by the mixture of rosaniline and aniline, and that the magenta used by Ehrlich was not a definite chemical substance. On the clinical points raised, it was too early yet to say much.

Jurisprudence.

THE IDENTITY OF A PONY.

THIS was a jury case, and was tried at the recent October sitting of the Knighton County Court, before His Honour, Judge Arundel Rogers. The action was brought to recover possession of a black mare pony.

The plaintiff was Edward Harris, farmer, Hendre, Beguildy, and the defendant was Edward Harris, farmer, Nanty, Llanbadarnfynydd.—Mr Weyman, solicitor, Ludlow, appeared for the plaintiff, and Mr. Woosnam, solicitor, Newtown, represented the defendant.—Mr. Weyman said that the crucial point in the case was the age of the pony, and he suggested that before evidence was given the jury should have the opportunity of inspecting the animal.—Mr. Woosnam questioned whether it would be advisable for the jury to see the pony before the evidence was given.—His Honour asked if the pony was in town, and being informed that it was, gave directions for it to be brought to the door of the court, so that he could see it as well as the jury.—Mr. Weyman detailed the circumstances of the case, and then called his witnesses. Plaintiff is a breeder of ponies, and, according to the custom of the country in which he lived, in May last year he turned the pony in dispute, along with three others, on to a hill in his occupation. This land was near some occupied by defendant, and at that time it was unenclosed. The ponies were seen from time to time by Williams, plaintiff's shepherd, up to October last year, when one of the ponies was missed. Inquiries were made, but nothing was heard of the animal until May in this year, when from some information that reached plaintiff he visited defendant's farm in company with his shepherd. Meeting defendant and his son the four persons went to the place where the pony was confined, and both plaintiff and his shepherd at once identified the animal. Defendant claimed the pony, and refused to part with it. Plaintiff knew it by some marks he made upon its ears before turning it on the hill, and if it was his it would now be rising five years old. In concluding his address to the jury, Mr. Weyman said that the simple question between plaintiff and defendant was the age of the pony.—Mr. Woosnam said he would not accept this statement.—Mr. Weyman said his contention was that the pony was four years old, and he would call a number of witnesses to detail the history of the pony, to detail the marks by which it was known to belong to plaintiff, and he thought that the jury would after that have no doubt as to whom the pony belonged.—Mr. Woosnam said the defendant knew the pony to be his property by its age, by some marks on the tail, by its forehead, and general appearance.—Plaintiff having seen the pony at the door of the Court, said he would swear that it belonged to him—that it was one of the four he turned on to the hill in May last. Before turning it out he cropped the left ear, and on the right he cut a "swallow fork." When he saw the pony at defendant's farm, after examining it, he said, "That is my mark exactly."—In cross-examination, plaintiff said that when he first saw the pony on defendant's farm he said, "That pony is not mine," but he afterwards changed his mind. It was in very poor condition when he saw it and in a dark stable. He made the marks himself. He did not tell defendant that he had not marked the pony for years.—John Williams, plaintiff's shepherd, identified the pony as his master's property, but was

unable to speak as to its age. The pony was turned out some time in May last year, and he saw it two or three times a day until it was missed in October. He did not tell plaintiff that the pony was missing until some time afterwards, being under the impression that it had strayed. But when he could not find it he gave information of the loss to plaintiff. He corroborated the evidence as to the visit to defendant's premises.—William Josephs, farmer, said his land adjoined the hills where plaintiff's ponies were turned upon. He knew the pony very well, having frequently seen it, and identified the one brought to the door of the Court as plaintiff's property. He should think it was a late foal.—The pony was also identified as plaintiff's by a man named Hawkins.—Mr. Tewson, V.S, Leominster, said he had examined the pony produced, and in his opinion it was four years off. He should think it was a late foal.—His Honour: The case has now been brought within a nutshell. You are going to say it is three years old?—Mr. Woosnam: We say it is three years old, and that it is an early foal.—His Honour: Call your veterinary surgeon.—Mr. Whishing, V.S., Newtown, said he had examined the pony in dispute. There could not be any mistake as to its age—it was three years off. He should say it was an early foal, by reason of the fourth tooth being well up.—His Honour said he was only going to ask the jury one question. They had heard the evidence of the veterinary surgeons, and the question was had they any doubt about the age, because if they had he would call in the assistance of an independent man.—One of the jurymen said there was a doubt. —His Honour: Then the pony must remain in the possession of the High Sheriff of the Court until Wednesday, and I will send an experienced person to decide as to the age, and the verdict will be entered accordingly.—His Honour then directed the question of age to be referred to Mr. W. E. Litt, M.R.C.V.S., of Shrewsbury, and that gentleman examined the pony on November the 1st, immediately certifying the age of the pony to be four years off

Army Veterinary Department.

Gazette, January 9th.

Veterinary Surgeon J. Findlay has been placed on temporary half-pay, on account of ill-health.

Obituary.

THE demise is reported of the following members of the profession: P. Rackham, M.R.C.V.S., Lowestoft, who graduated May, 1850; D. C. Murphy, M.R.C.V.S., Cork, who graduated April, 1877; J. Leggett, M.R.C.V.S., Suffolk, who graduated April, 1862; T. P. Richardson, M.R.C.V.S., Clonmel, who graduated May, 1838.—*Vide Register R.C.V.S.*

In October last a well-known name in connection with the micro-organisms of disease disappeared. Dr. Davaine died in Paris, at the age of seventy-four years, and his claim to remembrance will chiefly rest on the very important discovery he made, in recognising the *Bacillus anthracis* as the active agent in the production of Anthrax—a discovery which has indirectly revolutionised our notions with regard to transmissible diseases. But science also owes him much for other services, and especially for some remarkable researches into the nature of Septikæmia, and the anti-virulent properties of a large number of medicinal agents. His treatise on Entozoa is highly esteemed as a manual and work of reference.

The death is announced of Dr. Camarero, Director of the Veterinary School of Leon, Spain; and also of Dr. Fr. Lundberg, Director of the Stockholm Veterinary School.

XUM

Correspondence, etc.

"IS PUPILAGE TUITION DESIRABLE?"

SIR,—Whether I decide to adopt a line of argument advocating pupilage, or I deprecate it altogether, I am fully persuaded there are certain carping individuals who, from a sheer pure love of opposition would disagree with any argument, whichever side was advocated. This knowledge will not deter me from penning a few thoughts that occur to me upon the above subject.

I will endeavour to divest my mind of all prejudice, and take it for granted that both parties are actuated alike by a sincere and honest desire to serve the profession, and would have the student taught such subjects, and in such a manner as will render him a most useful and most eminent man in the calling in which Providence has placed him. It will not be necessary for me to do more than to allude to the fact, that there are great numbers of young men who attend the specified time at college, are examined, and get their diplomas; then go into practice, and when left to themselves become utter failures. This is admitted on all hands and by both parties; it is deplored by both parties; both parties would rejoice equally if some method could be devised by which all students should become clever, useful, and eminent practitioners; but all candid men who have had experience will freely admit that there are, unfortunately, some individuals of certain types of mind and habit, that no kind of education, however long and carefully inculcated, can render clever men. Admitting this, we will dispense with this class, and deal only with that class capable and anxious to be moulded into clever, useful, and eminent men.

We now approach closer, and it is my desire to lead the thoughts of both parties courteously and conciliatorily to attempt a solution of this question, for the common good.

1st. *We are agreed* that a higher scholastic education than formerly has become necessary, and that the test shall be applied fairly and firmly by an independent examining body in a uniform manner. This examination is not to interfere in the slightest degree with the freedom or independence of any of the teaching schools.

2nd. *We are agreed*, however necessary it may be that a man should be well educated to make him a gentleman, such education alone cannot make him a clever veterinary surgeon.

3rd. *We are agreed* that lectures, however well delivered, and however profound, coupled with much study and book-learning, of themselves cannot make him a clever veterinary surgeon.

4th. *We are agreed* that practical tuition is not only desirable, but is actually essential, if the character of our profession and its public usefulness are to be maintained. Those influential and important centres of power, the Veterinary Medical Associations, are all in favour of pupilage tuition.

5th. *We are agreed* that it is, comparatively speaking, a very costly matter to become a veterinary surgeon, especially if the youth is obliged to undergo a term of pupilage for which he pays £100, then add to this his living for one, two, or three years; and then his college expenses. It was very considerately observed by one or two speakers at the meeting of Council, that there are many very promising young men (especially in Scotland), who really could not afford this outlay. I, for one, felt the full force of this argument. I have heard it often before, but we never hear of any of the colleges showing an anxiety to meet the case by reducing their fees. What is the universal maxim? "Get money's worth." Now, I have had a somewhat lengthy experience in my profession, having paid £100 apprenticeship fee, worked from morning until night amongst sick and lame horses for six years, then to college the required time, got my diploma, have mixed freely in my profession ever since, amongst the highest intellects and with others with

many shortcomings. I have been a careful observer, and now after nearly fifty years of professional life, I freely and unhesitatingly state that the period I spent as a pupil has been of priceless value to me throughout my life, and that the £100 paid as an apprenticeship fee was the best-laid-out money I ever spent. I know many others who can endorse all that I have said in their own cases. At the Council meeting, I related a case in point. A gentleman of superior education and abilities, fresh from college, in possession of a diploma, went the other day to see a lame horse; he diagnosed it to be a case of severely sprained fetlock-joint, and treated it for such. I saw the case the day but one after, and found matter exuding between hair and hoof, the foot full of pus. Now, I maintain that a young man who had spent two or three years working from morning until night amongst sick and lame horses could not have made such a glaring blunder. I made bold to say at the Council meeting that "this was one of the results of college teaching, without pupilage." Four teachers who were present instantly cried out as if with one voice, "No, no, no." I replied, "What else can it be? he has had none other." I have no desire to speak disrespectfully or offensively of any teacher, and if I have done so I beg respectfully to withdraw it.

6th. *We are agreed* that a gentleman having had a diploma granted him, and who commences business on his own account, if he frequently makes gross mistakes, diagnoses incorrectly, treats his cases incorrectly, and that his sick and lame cases nearly always fail to recover, he soon gets the character of possessing an inadequate practical knowledge; he stultifies his diploma, his teacher, his college, his profession, and his examiners.

7th. *We are not quite agreed* in what manner he should obtain this inestimable knowledge, which is of supreme importance to him in success in after life; we are arrived at a point which is the nearest approach to an understanding that has ever yet been got. Sir Frederick Fitzwygram at the last Council meeting, very gentlemanly, courteously, and impressively stated, "That it seems to be generally admitted the schools have not got the facilities necessary to teach the student adequately practical knowledge." Another member maintained that we have ample power in our hands to ensure that none but thoroughly proficient practical men be admitted into our profession, by observing a far stricter and severer practical examination. Professor Walley proposed, "That the oral precede the practical examination; if the student fail in the oral he cannot go up for the practical; but if he succeeds in the oral and fails in the practical, he shall not again be examined on any of the oral subjects he may have passed in." Mr. Cartledge made what I think was a very wise suggestion, and which Professor Walley incorporated in his motion, to the effect that "the student failing in his practical examination shall be obliged to go to some veterinary surgeon to gain the knowledge he lacks, and to bring with him when he comes up for examination again, a certificate proving that he has been so employed." This motion after considerable discussion was put to the vote and lost by one vote. There were four members absent, who I know are heart and soul with us in this matter. It is a matter that does not concern us in the least how or where the student gets his practical knowledge, so long as he really has it; this is all we ask for, all we want, all we ever wanted. With such a student, the examiners may examine him as long as they like; the longer the better; the more they see of him the more he is satisfied. I say without fear of contradiction, this degree of practical expertness and knowledge can only be attained by diligent observation, and working from morning until night amongst sick and lame horses for two or three years, in conjunction with the best college teaching.

There is a word that is nearly as useful and important as that "still small voice"—that word is "compromise." I believe that the two parties,

and in fact the whole of our profession, could be brought to see the wisdom and fairness of carrying out Professor Walley's motion with Mr. Cartledge's suggestion added. The two Edinburgh professors gave in their adhesion to it if we would not continue to insist on compulsory pupilage, and I cannot but feel persuaded, if it be advocated in a kindly and conciliatory spirit, that it may become the law of our College, and result in the immense well-being of our profession. At the Council meeting Mr. Peter Taylor proposed that the student should (at the practical examination) be examined by each of the four examiners for a period of not less than a quarter of an hour by each examiner. One member objected, and wished it to be left to the discretion of the examiners; another objected, and made a remark, "What ever matter could you find to occupy a quarter of an hour?" Mr. Taylor manfully replied, "Why, to examine a horse as to soundness alone, if efficiently and thoroughly, should occupy the student half an hour at least." I seconded Mr. Taylor's proposition, and it was carried. One of the speakers in the course of the discussion observed (as we thought in reference to his own personal experience, as our thoughts involuntarily reverted to it) that older practitioners occasionally made blunders as well as young men. This statement of his no one questioned. I sighed then, as I have often done before, for cohesion of sentiment and action, which experience has, alas! shown me is a perfection unattainable here below.—Yours, etc.,

THOMAS GREAVES, F.R.C.V.S.

VETERINARY EXAMINERS.

SIR,—My letter to you, of 10th November, was written from good motives and in the best interests—as they appeared to me—of the profession. If it tends to draw attention to the subject, and helps, even in the slightest degree, to secure a little more justice for Scotch and Irish practitioners, and to increase the number of examiners, either now or at future elections; if it shows that the appointment of recently resigned professors is not unanimously approved of, and reminds gentlemen who act as veterinary advisers of the public, through the medium of agricultural and sporting papers, that their conduct is not commendable, the letter will have fulfilled the purposes for which it was written.

The personal remarks and insinuations of your correspondents, in this month's issue, are a little like my non-election—a very secondary matter—of little importance to myself, or, I dare say, to others. If you will kindly grant space, I will support and explain some of my own statements to which these correspondents apparently take exception.

Professor McFadyean's language regarding the appointment of veterinary surgeons as examiners in chemistry, botany, and physiology, merits, in my opinion, stronger words than I applied to him. For a young professor, at the opening of his college, to stand up and declare that the complete confidence in the Examining Board of both teachers and students has been destroyed by the appointment of veterinary surgeons, and to reiterate this statement, in a special letter to the *Scotsman* newspaper, is going just a little too far. His "diffidence and humility" are of little consequence; but before sending out such a statement to the public, Professor McFadyean should have ascertained the real feeling of teachers and students in the matter. Fortunately, we need not trouble further about it. Professors Williams and Walley, recently at Glasgow, in presence of about forty members of the profession, emphatically stated that they had "perfect confidence" in the new Examining Board; "entire confidence" that the newly-elected examiners would do their duty. And we may therefore rest assured that the young professor's statement, if true at all, is true only as regards himself, and that the appointment of veterinary surgeons has *not* destroyed the complete confidence of teachers and students in the Examining Board.

Professor McFadyean's other statement, or "proposition" as he terms it, I did not even notice. If this "proposition" were applied to professors in the same way as to examiners, I fear there would be a few empty chairs in the lecture-room, as well as at the examining board. If it be true "that no one should be appointed an examiner on any subject unless he is eminent in that subject," it is surely equally true that no one should "fill a chair" unless he is "eminent" in his respective department. Which of our veterinary professors was "eminent in his subject" at the date of his appointment? Some of them are not even eminent now, while only a very few have "made their names at all famous." Yet all our professors, so far as I am able to judge, are able, earnest, and successful teachers. So with veterinary surgeons when appointed examiners. They may know their subject sufficiently though they may not be, and may never be, strictly speaking, eminent in their respective subjects, but that they, as a rule, prove good, just, and able examiners cannot be doubted.

Nothing could be further from my thoughts than "sneering at the average student." But when, may I ask, did our students become such adepts in chemistry, botany, and physiology, that none but "eminent men and men who have made their names famous," can or should examine them? By far the greater number of these young gentlemen enter college quite ignorant of these sciences. Is the knowledge instilled into them by their professors, or acquired by themselves, so deep and profound that a veterinary surgeon cannot fathom it? The object and aim of the examinations is not to find out whether the students are thorough chemists, botanists, and physiologists, but to ascertain whether they possess such a knowledge of the sciences in question as a veterinary student should possess—such a knowledge as will justify the examiners in bestowing on them the diploma of the Royal College of Veterinary Surgeons. And for this purpose I hold—and I am simply one of those who hold—that a sensible, intelligent veterinary surgeon, with a fair good knowledge of his subject, will prove as good an examiner as an eminent specialist, who knows nothing personally of the duties, the wants, and requirements of the life on which the students desire to enter. At the same time, I candidly admit, like others, that the presence of eminent highly scientific men at the examinations, and the addition of their names to the diploma, is an advantage—but an advantage which one country should not possess at the expense of another. When "famous" men are examining in England "eminent" men should be examiners for Scotland. If veterinary surgeons are appointed for Scotland, they should also be for England. This is my only contention, the cause of my very consistent sympathy with the two professors—a sympathy for which I have had a poor return. "Had the right men been appointed"—that is, had Professors Turner and Crum-Brown been now the colleagues of Professors Burdon-Sanderson and Voelcker, or had, along with Mr. Taylor and Vaughan for Scotland, two veterinary surgeons (Scotch preferred, myself not included) been now examiners for England, paragraph iv. of my letter would never have been written.

Professor McFadyean's researches into the Transactions of the Highland Society might have led him to the more charitable conclusion that I have had fair opportunities of knowing what veterinary examiners and students really are. I too "have known examiners of a breadth of professional and general education to which Mr. C. has not a tittle of a claim express their astonishment at the professional knowledge acquired by '*good*' veterinary students within so short a period." And I also have heard such gentlemen puzzling the students and knocking them about in a way that a veterinary surgeon would never think of doing, and speaking of the indifferent students in language the reverse of complimentary. As to the students, I mean my words to be taken literally. Without any "sneering," but the very reverse feeling, I say that

each year among those who go up for examination there are "a few (say five) bright, clever young fellows" who pass an exceedingly good, an exceptionally good examination; that there are "a few (say ten) earnest, hard-working students" who pass easily and well; that there are a few (say five) so careless or inefficient that they are generally rejected; and that there are some (say ten) who are the bane of the examiners—the men to decide whose fate the presence of two examiners at each table is almost absolutely necessary. These men are good in some subjects, indifferent in others; some may pass, and others be relegated to their studies. While heartily concurring, therefore, in all the praise that can be given to the first fifteen men, I hold that "on the others there is room for improvement;" and such being the case, I fail to see why veterinary surgeons should not examine them.

As regards such subjects as chemistry, there are certainly exceptional men occasionally found among the students. These men have generally studied the subject before entering college, or it becomes with them a favourite study, and they give special attention to it. The late Professor Strangeways, if I remember aright, was one of this class; the first-prizeman in chemistry of my own year was another—he scarcely ever attended a lecture. I have heard him "grind" the class almost as well as our professor himself; he was a good practical chemist before entering as a veterinary student. I remember, too, the names of half-a-dozen graduates of the Highland Society "head and shoulders" above their fellows in physiology. These men are only examples of many others. They are the very men who, after having a few years' practice and a few years' experience as veterinary surgeons, will prove, in my opinion, as good examiners as can possibly be found. If Prof. McFadyean wishes a list from which to select examiners, he cannot do better than turn to that of the prize-men and better-class graduates of his own college and those of the other veterinary colleges. He will there find the names of not a few veterinary surgeons—certainly not "eminent" nor "famous," men who would never think of "posing" as chemists, botanists, physiologists, anatomists, or pathologists, yet men upon whose election "comment would *not* be superfluous," whose attitude would *not* be "beneath contempt"—men who, if appointed for five years, would prove fully qualified and able examiners of veterinary students in any subject whatever.

That a good many students shun dissection, and learn their anatomy from books, cannot be denied; and my remark to you, sir, was only made in the hope that by your examinations you might check a practice which is hurtful to the best interests of the students themselves. "Paper chemistry and physiology" I did not touch on. Though not commendable, they are not so hurtful, and a little more excusable, than "book anatomy." Prof. McFadyean said something about the "walls of my *Alma Mater*" and myself when I left them a good many years ago. Well, it is good sometimes to look back twenty or thirty years. As some one had to tell Professor McFadyean the other day, microscopical demonstrations were then almost daily given, and practical instruction in the use of the instrument was within our reach, though I fear some of us did not avail ourselves sufficiently of our opportunities. Let the students now be wiser. Six or eight distinct "subjects" lying on their backs or sides in the old dissecting-room, and from three to six students in a forenoon busy at each, was a sight, however, more commonly seen in those days, I venture to say, than now. The students of those days, with fewer advantages, compare very favourably with those of the present time in real, practical knowledge of anatomy. Thirty years ago, too, John Barlow sat in the chair, afterwards John Gamgee, Professors McCall and Strangeways; surely as good men as now.

As regards the horse and cattle practice examinations your correspondents appear to have failed clearly to understand my meaning. Cannot they

understand that I would rather indicate than enter on the subject? If Professor McFadyean and "A Country Practitioner" have carefully compared English practitioners with their Scotch brethren; if they have carefully noted respectively the cases and the treatment of each, the drugs and their applications, the examinations and the certificates; if they have seen the men on their rounds and at their daily work; and if they agree that "nationality" is nothing, that the system of practice pursued in England differs in no essential particular from that followed in Scotland, and that it is fair and right that "four English practitioners should be sole examiners in horse and cattle practice for the United Kingdon," then they will simply have come to a different conclusion to that at which I have arrived, and we can agree to differ. But after such a comparison and experience—I think that even Mr. McFadyean and "A Country Practitioner" will admit "that two other practical examiners—one Scotch and one Irish—should be added to the horse and cattle practice table respectively; making, with the two English gentlemen already appointed, four examiners on each table." English practitioners have at present four representatives at the practice tables, Scotch and Irish practitioners have not one. The duties, too, of the examiners, I beg to remind Professor McFadyean are not to ascertain whether the students can correctly rehearse and will faithfully follow the "prelections of the colleges," whether delivered in the "native dialect" or not, but to find out whether the students are fit to be licensed as veterinary surgeons—fit to begin practice wherever their lot may be cast; and I hold that for this purpose, and in justice to the students themselves, a mixed board—a board composed of a few of the best English, Scotch and Irish practitioners—is to be preferred. By simply transposing, but not altering, Professor McFadyean's words, we find he says that "it is undeniable that Scotch practitioners can be found of equal eminence with those from the sister country, it was a most unreasonable slight to the former that they were passed over when a Scotch Examining Board was being appointed." Wherein differs his words from mine, when I say in my letter to you, "that the council, by appointing such (English) gentlemen only, have done great injustice to Scotland and Ireland"? "A few of the very best men" surely means the men of greatest merit and ability. My remarks apply only to such.

In taking leave of the subject, and thanking you for your kindness, I have simply to give the personal insinuations of Prof. McFadyean and "A Country Practitioner" a broad, flat, emphatic denial. (I.) Justice to Scotland and Ireland; (II.) no recent ex-professors, and (III.) no persistent veterinary editors as examiners; (IV.) justice to Scotland at the chemistry and physiology tables, and to veterinary surgeons as examiners, and (V.) justice to Scotch and Irish practitioners and students in the horse and cattle appointments—the most important of all—these were my mottoes and motives, as any impartial reader may ascertain by simply reading the paragraphs of my letter as numbered. "My nomination for the Scotch Board" was, and is, a very secondary matter—a matter which I stated was "of little importance." My letter to you, sir, was not due to my non-election; yet here is a Scotch professor ready to take up the latter as his clue, to make personal remarks and comparisons, and bring all the force of clever, sarcastic language to discredit some of my statements, and directly and indirectly discredit objects which, in my opinion, it is his duty to promote. Here, too, is "A Country Practitioner" making coarse personal remarks and gross misrepresentations, and yet adding neither name, date, or place to his letter.

But for your readers, and in support and explanation of my own remarks, I would not have noticed such letters. The personal remarks of your correspondents I shall not follow, nor reciprocate. I leave your readers to form their own opinions on the subject.—I am, Sir, yours very truly, C. CUNNINGHAM.

Slateford, *15th January*, 1883.

XUM

THE FLESH OF DISEASED ANIMALS AS FOOD.

SIR,—A letter from "A Country Doctor" in to-day's *Lancet* describes a case in which the flesh of a cow that had been slaughtered *while suffering from Anthrax or Splenic Apoplexy* was sent by the owner to the London market and realised £18. The said owner *was assured by the veterinary surgeon that the flesh would be innocuous.* Undoubtedly, division of opinion exists as to the fitness of certain flesh as human food, *e.g.*, when an animal has been slaughtered when suffering from Pleuro-pneumonia, Tuberculosis, Parturient Apoplexy, in any stage of lactation or pyrexia. But surely, sir, no member of the profession would publicly state that *anthracoid flesh* was fit for food—even for a dog—*knowing* the terrible nature of the disease. In the case quoted above, a dog died from "licking up some of the blood;" two colts "sniffed the blood while crossing the yard where she had been killed; they died very quickly." "A man who cut the animal's throat, leaving some blood on his arm and shirt-sleeve, died in a few days of Erysipelas and blood-poisoning;" this "blood-poisoning" was probably Anthrax.

Is it not time, and would not the coming Congress be a good opportunity, to freely discuss the question from a scientific, statistical, and practical point of view, as to what flesh is, or is not, fit for human food, where there has been *the least departure from health, and the animal slaughtered in consequence?* Putting aside all *sentiment*, there must be a *fact* respecting the question entirely beyond *mere opinion.* This, if known, and universally supported by the *body* of the profession, would remove individual difficulty, and put an end to conflicting forensic evidence.

I remain, sir, yours truly,

Dartford, 13th *January*, 1883. WM. ALSTON EDGAR.

HILL'S "BOVINE MEDICINE AND SURGERY."

SIR,—My reply to Mr. Macgillivray's last letter will be brief, and that chiefly on a point which would appear to be a question of truth or falsehood between us. Mr. Macgillivray in his first communication observed, "One of the chief attractions of this work, *as advertised* (he omits to add since the subscription list closed), was, in my eyes, that it was accompanied 'with an Appendix on the Practical Inspection of Meat,' copiously illustrated with 'woodcuts and coloured plates.'" In the remarks just quoted, Mr. Macgillivray was leading, or attempting to do so, the readers of his letter to suppose that he had purchased the work with the above expectation.

Now for the *exposé*, the meaning of which *I* will not query his knowledge of. In his last letter Mr. Macgillivray says, "My cheque in payment of the book was forwarded 25th *August*, 1881," at which date the advertisement ran as follows:—"The Principles and Practice of Bovine Medicine and Surgery, containing upwards of 1,000 pages of letterpress, with numerous woodcuts, twelve coloured plates, and an appendix on the Practical Inspection of Meat."

Not a word is mentioned about a copiously illustrated appendix in that notice, which continued month after month unaltered; whilst, instead of twelve coloured plates, the work contains *nineteen*, which incurred a further cost of nearly a hundred pounds, and gave Mr. Macgillivray *more than he was led to expect* when he sent his cheque.

I will leave your readers now to decide as to which of us has written the truth.

My remarks on Dr. Crisp's article were perfectly justifiable, inasmuch as that gentleman had cast an undeserved and unwarranted reflection on our profession. It will be within the recollection of the readers of that article that Dr. Crisp stated: "It is a remarkable fact that not one of our writers on veterinary medicine that I am acquainted with has mentioned Rickets in the lower animals. Youatt, Gamgee, Williams, and Fleming have all passed

it unnoticed." In what Mr. Macgillivray terms my critique, I gave the names of lecturers and authors in our profession who *had* discussed Rachitis, especially one whom Dr. Crisp named as not having done so, viz., Professor Williams, in whose work the subject is well dealt with and *illustrated.* I consider it, as I am sure every right-minded man will, only fair that such a statement as that made by Dr. Crisp should not go forth uncontradicted, and in Mr. Macgillivray's allusion to this matter I fail to see any connection with the one now at issue.

His other would-be sarcasms are, I consider, beneath my notice, excepting that relating to the delay in the publication of my work, which delay I will take this opportunity to state was entirely due to the tedious execution of the illustrations (especially the coloured ones), a delay which caused me much annoyance, many journeys to London, and some amount of unpleasantness with the firm who produced them. I in no way contributed to that delay and much regret that the patience of my subscribers should have been so taxed, while I appreciate the forbearance of those who have made no complaint, though they have doubtless lost a trifle of interest on their "bit o' siller," yet withal do not sneer.

If my efforts in this literary production have been a failure—so be it. Thus far, however, I have no reason to be otherwise than flattered by its reception.

The letter penned by a *vet. in embryo* (judging from the signature), will receive the treatment all communications from individuals who conceal their names do at my hands, viz., remain unanswered.

Yours truly,

Wolverhampton, 10th *January*, 1883. J. WOODROFFE HILL.

THE REGISTRATION OF EXISTING PRACTITIONERS.

DEAR SIR,—I can fully endorse the statements made in a letter appearing in the *Veterinarian* for December last, with regard to the registration of existing practitioners. If we are to be judged by *members* who, instead of adorning the profession, are a disgrace to it, and who look on some of us who have a regard for our character and reputation with a jealous eye, I fear many will get "scratched." I have in my mind's eye now two *members* who both reside within seven miles of me—one is often content to sleep in an outhouse on a farm or the stable of a village inn; the other has not possessed a horse to visit his patients for the last ten years; and both have spent a fortune at the police-court in fines for drunkenness, etc. And yet such are to have a voice whether an existing practitioner who strives to maintain a reputable position in society is a fit and proper person for registration! Having been cradled in the profession, studied some of the best veterinary authors during youth (with the intention of entering upon collegiate duties at Camden Town, but was prevented through family circumstances over which I had no control), spent five years as assistant to veterinary surgeons, commenced taking the *Veterinarian* in 1872 and latterly the VETERINARY JOURNAL, and now been over fourteen years in my present practice, I do not like to settle down with the epithet of impostor, quack, or charlatan. As your correspondent suggested, if any additional reference is needed to what has been given, surely clerical, medical, or magisterial evidence might be obtained; but I fear, if left to the tender mercies of such *members* as I have represented above, I am only one of many who possibly may be rejected.

I remain, dear sir, yours, etc.,

"JUSTITIA."

PREMATURE PROFESSORS.

SIR,—I have read the introductory address delivered before the students of the Clyde Street Veterinary School, by the young man who designates

himself, or is by some others designated, "Professor" McFadyean, and I do not know whether astonishment, disgust, or amusement possess me most. Surely if anything is more than another calculated to bring introductory addresses into ridicule, and the title of "Professor" into contempt, it would be this very young man, this "Professor," foaming with rage in his ludicrous attempt to abuse the Royal College of Veterinary Surgeons and the Examining Board, and defame the entire body of the profession, of which he is a juvenile, and—so far as his abilities and work are concerned—an unknown, or at most, an obscure individual.

Not only are some of his statements the opposite of correct, but they are calculated to mislead. If I am not mistaken, he is the young man who tried to create a disturbance between the profession and the Highland Society of Scotland, when the Veterinary Surgeons Bill was in Parliament; and the object of his address, and also that of a letter which he has recently published in the *Scotsman*, is evidently intended to damage, to the utmost in his power, the veterinary profession, and to sow strife and discord in its ranks. "'Tis an evil bird that befouls its own nest" is an old and a true saying, and this so-styled "Professor" bids fair—if he goes on as he has commenced—to be one of the foulest birds we have ever had in the nest professional. If he occupied any position in public or professional estimation, his ill-bred impertinences would merit serious castigation; as it is, however, he is all but unworthy of notice, and his remarks are as contemptible as their motives are malicious. I am informed that he is studying human medicine; if so, this may account for his wrath that we are resolved to dispense with medical men, who know nothing of our branch of medicine and surgery, at the examinations. I fancy that, so far as he is cared for, or is likely to be of any value to us, he had better go over to human medicine altogether; he can well be spared, as his career as a Professor (if the "address" is a criterion) does not promise well, and he will only be missed in a certain sense. What I wonder at is that such pernicious nonsense as he is reported to have blurted out before a class of young men aspiring to enter the profession (which he was doing his utmost to defame), should have been allowed by the Principal of the school. I fancy in my student days such venomous trash would not have been permitted to occupy the time of the students, or if he had persisted in supplying it he would have been hissed and pelted from the room. I fear there is not much regard for the students' proper training, when such morbid harangues are allowed to be delivered before them. I would be sorry indeed to send my sons to a school where their estimate of their profession would be derived from such a Professor—that is, if his lectures are couched in the style of his address.

Fancy the gross impertinence of this young man, the imprint of whose breeches is scarcely yet effaced from the students' bench, in stating that *he* (as he can only speak for *himself*) has lost confidence in the Examining Board, because it is composed of veterinary surgeons!

In his intense desire to depreciate the board, he took very good care not to tell the students that Professor Turner, the late examiner in physiology in Scotland, is unknown as a physiologist, and is a human anatomist; that the examiner in Veterinary Materia Medica in Scotland, in all probability never prescribed a dose of medicine for an animal in his life, or studied the action of medicine on animals—being a human physician.

The "Professor" was careful to keep this information in the background, as it would not have suited his purpose to allude to it. Did the "Professor," or any one else, ever hear the name of Professor Turner mentioned as eminent in physiology, or that of Dr. Dunsmure in relation to materia medica and therapeutics? Neither of these examiners were specialists in the subjects on which they examined, neither did they even teach these sub-

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jects; one, indeed, was a practitioner in private practice. So much for the nonsense of the young "Professor," upon which he tries to find a peg on which to hang a string of abuse in regard to the examiners. I believe the "Professor" teaches, or professes to teach, anatomy; and, if all I hear is true, the students at the Clyde Street School know less of this important subject than they did twenty or thirty years ago. This can scarcely be wondered at, if the address is to be taken as a proof of the kind of teaching they receive. At any rate, I think every one who reads the address will agree with me, that instead of wasting the students' valuable time, and poisoning their minds with a deleterious dose of professional politics (which are never in season with students), a practical demonstration in anatomy was what they stood most in need of, and what they paid their money to obtain. Some one should look after the "Professor," and teach him what to teach, and how to teach, if he allows his attractive name to honour such a degraded profession, and he condescends to remain a member of such an unworthy and corrupt institution as the Royal College of Veterinary Surgeons. If in time he only equals some of the men who are members of that corporation; still more, if he only comes near his predecessor in the anatomy chair of thirty years ago, he will have to change his course of steering very considerably, and not only learn manners, but also his profession.

The name of Professor Dick is not one to conjure with, and the "Professor" should be warned not to make too much of it in attempting to raise the reputation of the Clyde Street School to what it once was. Professor Dick has not left his equal in Scotland for some things, and the glory of his school vanished with his death, never to return—if the "Professor" is to be taken as a typical successor. But Professor Dick belonged to a period in veterinary history which has gone bye, and it will not benefit any school, nor yet the profession, to attach itself to the coat-tails of any individual, or rely merely on a past reputation. Professor Dick was a good man in his day and generation, but the young "Professor" will not shine well if he depends on the light he may try to borrow from this source; though he might do worse than follow, to some extent, in the footsteps of the *real* Professor.

Perhaps, after all, the fault is not so much in "Professor" McFadyean, as in the system which has constituted him a professor prematurely—a kind of tuitional anomaly. Owing to circumstances peculiar to veterinary schools in this country, it generally happens that newly-graduated students are selected to teach, probably not so much from any mental endowments they may possess, as from their constitutional ability to subsist on a meagre diet; and as the staff of the schools must form an imposing *ensemble* of "Professors," as a guarantee of complete efficiency to the public, these youngsters — or at least some of them — are dubbed "professors" at once, and installed in chairs, which at other colleges it requires years of energy, competition, and well-tried ability to obtain. To their great credit, some of these premature veterinary professors, endowed with prudence and modesty, have the good sense to keep quiet, to learn, and to do all that lies in their power to promote the well-being and good name of their school and profession. It is only too evident, however, that others do not so act; and that, manifesting all the discreditable attributes of badly-trained young men, they bring discredit and ridicule upon, not only the premature professors, but veterinary schools and teaching. If there is anything more objectionable than another, it is a very young professor expressing himself *ex cathedrâ* on subjects which he does not understand, with which he has no right to meddle or to be heard, and squandering away the hours of students in talking damaging nonsense on matters which con-

cern them not. Such young men must be a nuisance whenever and wherever they appear; but it is the principals of the schools who should be held responsible for their appearance. It is earnestly to be hoped that these lads will be kept more in hand, and that if their vanity and presumption prompt them to deliver addresses to students, that these addresses will be overhauled by some one who knows what they should be.

With regard to veterinary surgeons as examiners, those who should know best are of opinion that in every respect they are preferable to medical men who have not made the hygiene, physiology, therapeutics, and pathology of the domestic animals a special study. It is scarcely less than a farce to appoint medical men to examine veterinary students, when they do not know what their requirements are; and the premature professor is so young in the profession, and has had so little experience, that anything he may have to say in favour of medical men, to the disparagement of veterinary surgeons, must count for less than nothing.

As to the nationality of the examiners, this cannot be of any importance, when we reflect that Scottish students in Scotch schools are, perhaps, always in the minority, the majority being composed of English and Irish students. Indeed, the nationality question must provoke a smile, when we know that of the principals of the three Scotch schools, one is an Englishman who studied at the London school, and another is a Welshman. What with principals and students, there is no basis whatever for a national grievance. Besides, the Council of the Royal College is composed of representatives from the three kingdoms, and they elect the examiners.

Yours, etc., "ASMODEUS."

(Three members of the examining board are Scotchmen, and the present President of the R.C.V.S. is also a Scot, and was trained in Dick's School.)

A CORRECTION.

WE regret that, through an error in the Register of Veterinary Surgeons, it was stated that the late Mr. Ashe, of Cork, an obituary notice of whom appeared in the Journal for last month, graduated in 1874. We are informed that he graduated in 1849.

A number of communications are unavoidably held over until next month.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. W. H. Ashe, Cork; A. E. Queripel, A.V.D., Punjab; J. Nunn, A.V.D., Punjab; W. A. Edgar, Dartford; T. Greaves, Manchester; J. W. Hill, Wolverhampton; J. B. Wolstenholme, Manchester; W. E. Litt, Shrewsbury; J. Penberthy, London; "Justitia"; C. Cunningham, Slateford; T. Hopkin, Manchester; "Asmodeus"; T. Chalwin, Adelaide; J. J. Sperring, Dublin; A. W. Hill, London.

BOOKS AND PAMPHLETS: *F. Blazekovic*, Die Krankheiten des Herzens unserer Hausthiere; *B. G. Wilder* and *S. H. Gage*, Anatomical Technology as applied to the Domestic Cat; *E. Vogel*, Die Auf Thiere und Thierseuchen; *G. Ercolani*, De l'Adaptation des Espèces au Milieu Ambliant.

JOURNALS, etc.—*Australasian Veterinary Journal; Annales de Méd. Vétérinaire; Lancet; Archiv für Wissenschaftliche und Practische Thierheilkunde; American Veterinary Review; Recueil de Méd. Vétérinaire; L'Echo Vétérinaire; Proceedings of the Medical Society of the County of Kings; Edinburgh Med. Journal; British Medical Journal; Revue Vétérinaire; Journal de Méd. Vétérinaire; Archives Vétérinaire; Recueil d'Ophthalmologie; Repertorium der Thierheilkunde; La Presse Vétérinaire; Journal of Comparative Medicine and Surgery; La Clinica Veterinaria; Der Thierarzt; Wochenschrift für Thierheilkunde und Viehzucht; Medical Press and Circular; Breeder's Gazette; Live Stock Journal; Chicago Live Stock Journal; Field.*

NEWSPAPERS.—*Birmingham Gazette; South Eastern Gazette; Norwich Mercury; Leeds Mercury; Life.*